EZ Logger Lite

User Manual

English

(Draft)

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Chapter 1: Introduction

1.1 Features

EZ Logger Lite is a data logger for PV Inverters; the data logger is a web-server device that capable of remote monitoring PV systems even in video camera. It can be accessed from anywhere in the world via a standard browser and/or monitoring program by entering the IP Address (or Domain Name), account and password. This allows EZ Logger Lite to transmit data directly to the Internet without going to the PV system.

Features:

- Connect Up to 20 inverters (by RS485)
- Email & SMS Notification & Daily report
- Compatible with Pro control monitoring software
- Support Wireless USB Adapter (using chipset: Atheroz/Ralink Support USB Hub)
- Support 2GB USB flash drive (FAT32) for data storage
- Support USB Camera (VIMICRO ZC0301 Plus processor built-in)
- Motion JPEG video stream
- LCD display shows; IP address, Subnet Mask and Gateway
- Built-in Web Server with 32-Bit RISC CPU
- 10/100Mbps Fast Ethernet Network Access
- Support Java-Enabled Web Browser
- Network Protocol: HTTP, TCP/IP, UDP, SMTP, PPPoE, Dynamic DNS, DNS Client, SNTP, BOOTP, DHCP, FTP, SNMP
- Resolution available: 640x480 (VGA), 352x288 (CIF), 320x240 (QVGA), 176x144 (QCIF), 160x120 (QQVGA)
- Frame Rate: Up to 15fps in 640x480, Up to 20fps in 320 x 240
- RTC with auto synchronization
- GPRS modem connection
- Temperature & Irradiation sensor connection

Hardware Specifications:

- 5.3VDC 1A Maximum
- Operating Temperature: 0℃ ~ 60℃; Operating Humidity: 10% ~ 90%
- Dimensions: 48mm x 63mm x 21mm
- Weight: 240 g
- For Indoor Use.

1.2 EZ Logger Lite as a Remote Monitoring System

EZ Logger Lite can help user to monitor a PV system by monitoring program such as Pro Control. The system diagram is shown in fig.1. The computers in LAN and/or Internet can access the PV system; the mobile phone can also get SMS from Data Logger. Even area without Internet, PV system also can transmit data through GPRS modem.

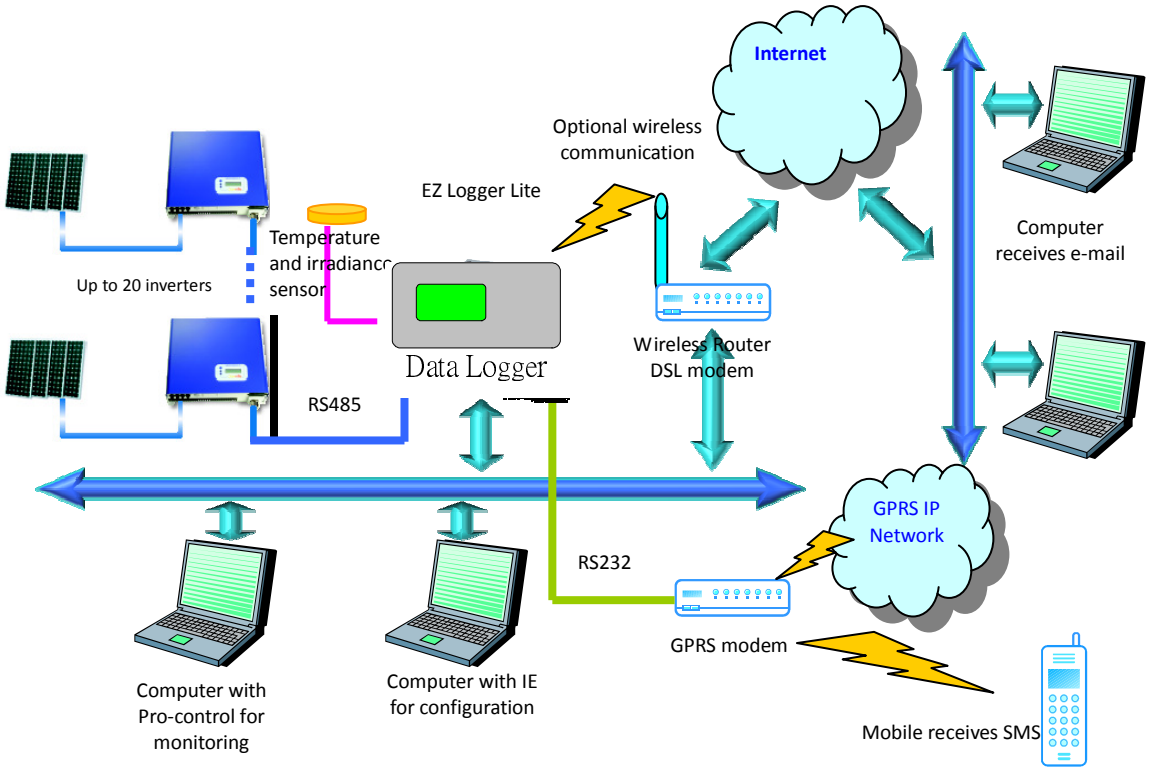


Fig.1 EZ Logger Lite Network Diagram

1.3 Package Contents

The package contains the following items;

1. EZ Logger Lite
2. User Manual
3. Connectors for RS485 and sensors
4. Power adaptor

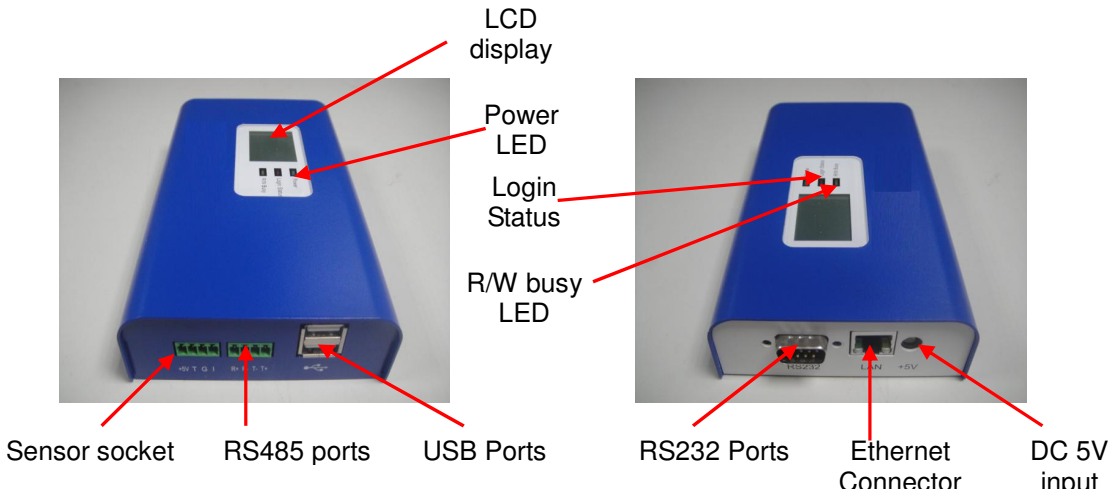


Fig.2 EZ Logger Lite Front and Back view

Type	Colour	Function
Power	Green	Power ON
Login Status	Yellow	User login indication
R/W busy	Red	Start flashing before 5 seconds of accessing USB memory, keep flashing during accessing of memory, stop flashing after read/write of the memory

Fig.3 EZ Logger Lite Status LED Indicator

Light indicators on EZ Logger Lite LAN Port LED	
Light color	**Condition description**
Green	When On: Internet speed is at 100M When flash: Data transmitting / receiving
Yellow	When On: Internet correspond speed is 10M When flash: Data transmitting / receiving

Fig.4 EZ Logger Lite LAN LED Indicators

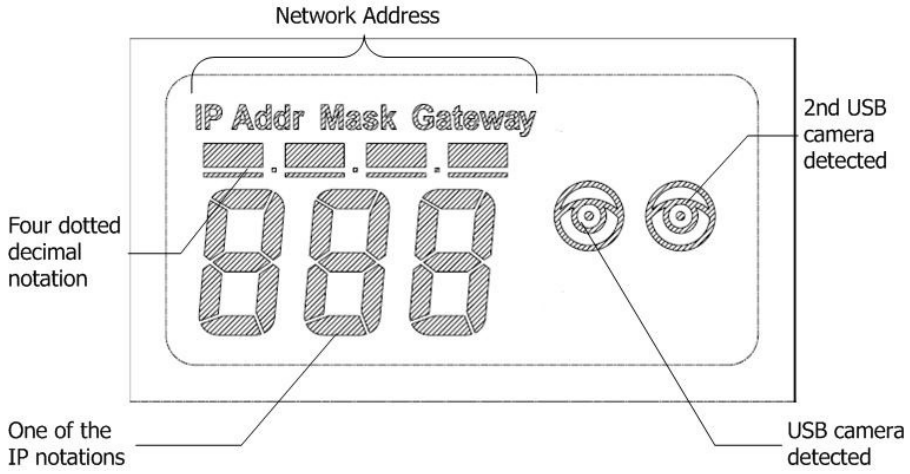


Fig.5 EZ Logger Lite LCD displayed info

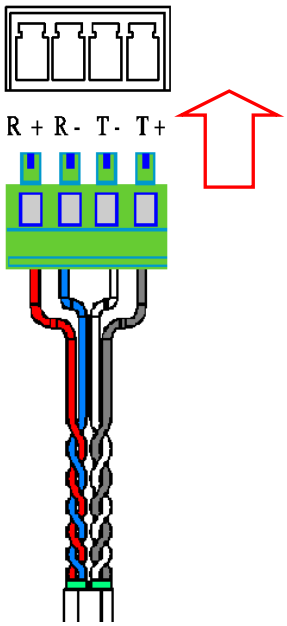
Chapter 2: Hardware Installation

The following details the hardware installation procedure for EZ Logger Lite.

Step 1:

Connect RS485 wired plug from RS485 card of inverter into RS485 port. The mapping between RS485 card of inverter to Data logger is:

EZ Logger Lite	R+	R-	T-	T+
RS485 card	R+	R-	T-	T+



Step 2:

Insert USB memory stick into USB port

Step 3: (Optional)

Connect the PC camera into the USB port of EZ Logger Lite.

Step 4: (Optional)

Connect the EZ Logger Lite to LAN by using the Ethernet UTP port.

Step 5:

Connect DC power adapter output into EZ Logger Lite socket, and plug the DC power input into the wall socket

Step 6:

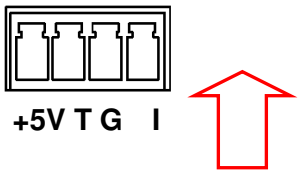
Wait a moment and the LCD will display the IP Address, Subnet Mask and Gateway. Use a Browser to log into EZ Logger Lite Web Interface

The icon on the LCD indicates that a USB camera is connected.

The LCD display shows that two USB cameras are attached to the EZ Logger Lite

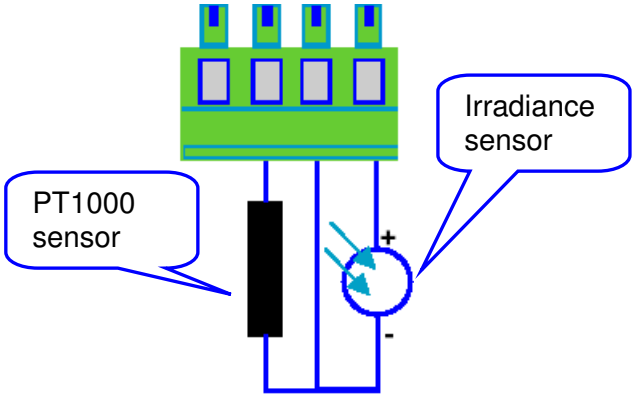
Step 7: (Optional)

Connect the Temperature and Irradiation sensor wires to EZ Logger Lite. The pin definitions are:



- **+5V:** 5V for external supply, +/- 5%, 500mA max
- **T:** Temperature sensor input
- **G:** Common point
- **I:** Irradiation sensor (+)

The specification of the sensor is listed in Appendix D.



Step 7: (Optional)

Connect GPRS modem to RS232 port of EZ Logger Lite

Chapter 3: Web Interface for Configuration

3.1 Introduction

EZ Logger Lite is designed to work with monitor software. To connect the Logger, user has to configure it in advance. To configure it, user can set it up though Web based program such as Internet Explorer as below.

1. Once you have finished the hardware setup shown in Chapter 2, write down the IP address shown on the LCD.

2. On a PC (located in the same LAN), open a Web Brower (eg.: Internet Explorer, Netscape, Mozilla Firefox or Opera).

3. Enter the IP Address as shown on the EZ Logger Lite LCD display and press **ENTER**.

Fig.6 Enter EZ Logger Lite IP address

4. EZ Logger Lite main screen will appear as below

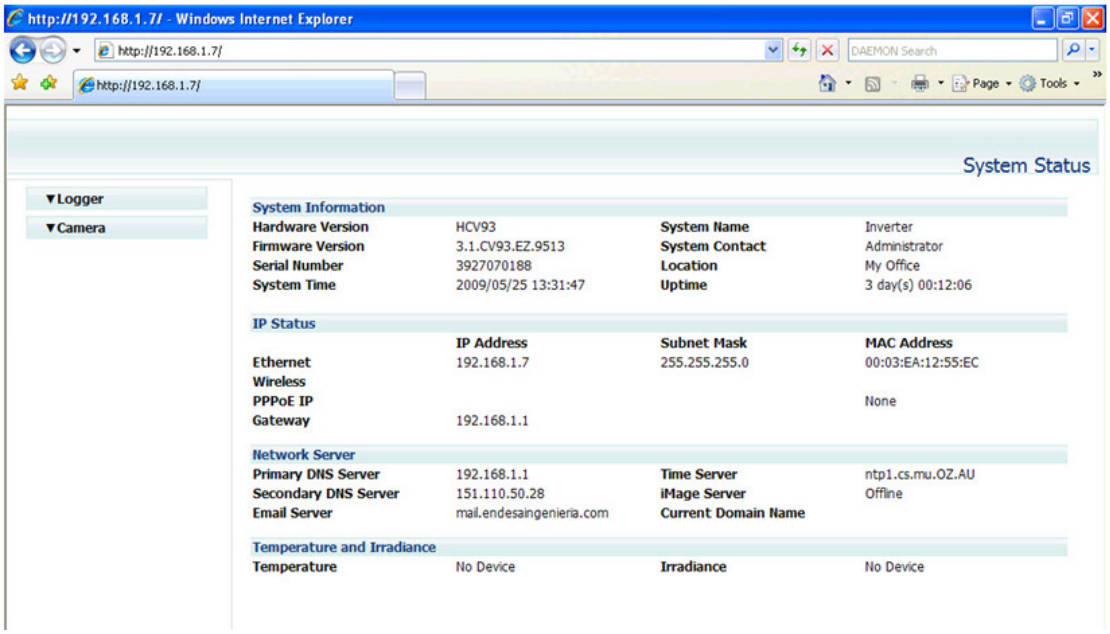


Fig.7 EZ Logger Lite main screen

5. After confirm the IP address; user can use Pro Control to monitor the data logger. An example frame is shown below.

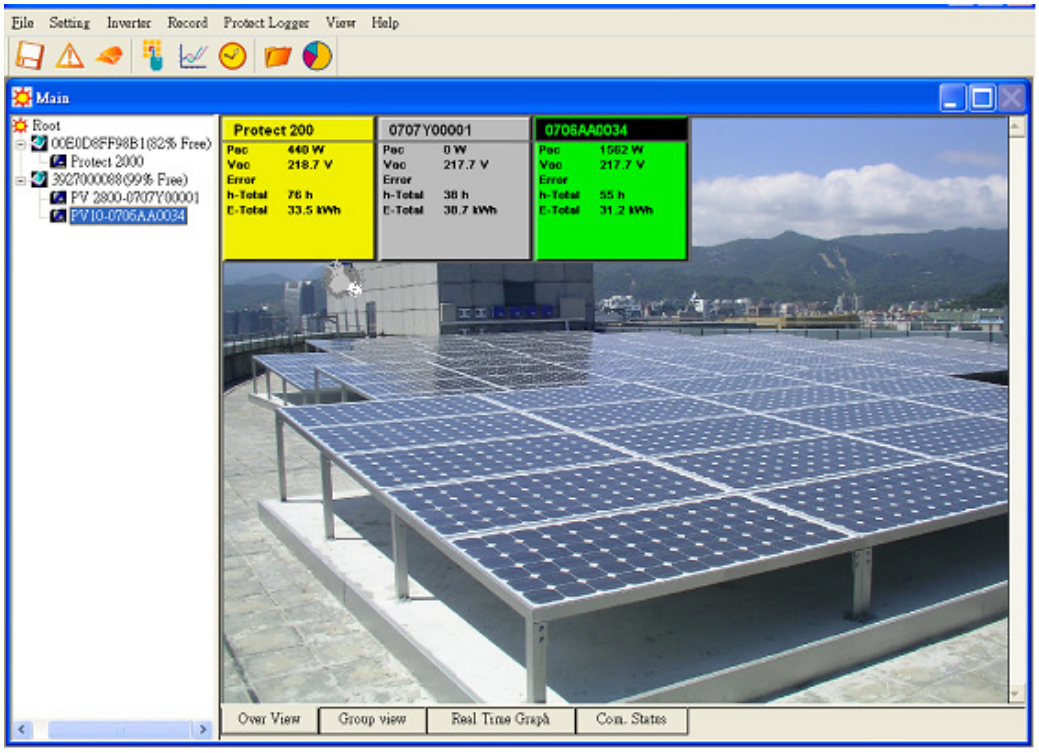


Fig.8 Pro Contorl main screen

Note:
If you are using proxy server in your Internet Explorer, you may have difficulty to connect Logger. To overcome this, please follow the steps in Appendix F

3.2 Using the Web Interface to setup logger

On the left side of the main page, there are 2 sections for setting. One is for logger; the other is for the setting of connected camera. In the following, we are going to explain the setting for the data logger.

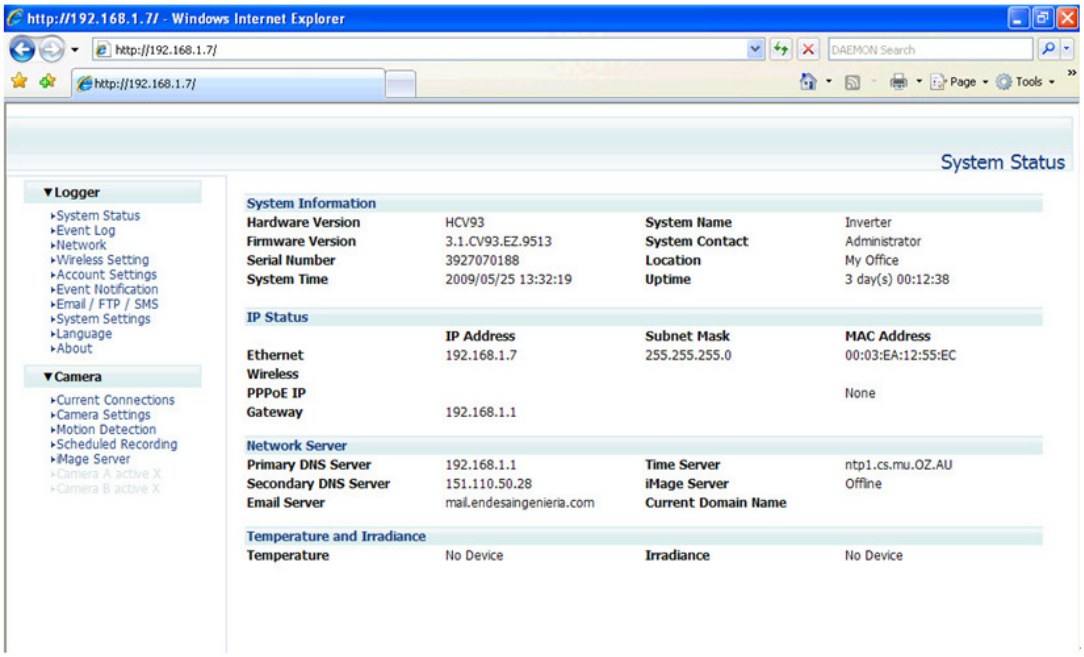


Fig.9 EZ Logger Lite Main Menu

3.2.1 System Status

This webpage displays all the information relating to EZ Logger Lite. This page is viewable by viewers of all permission levels[1].

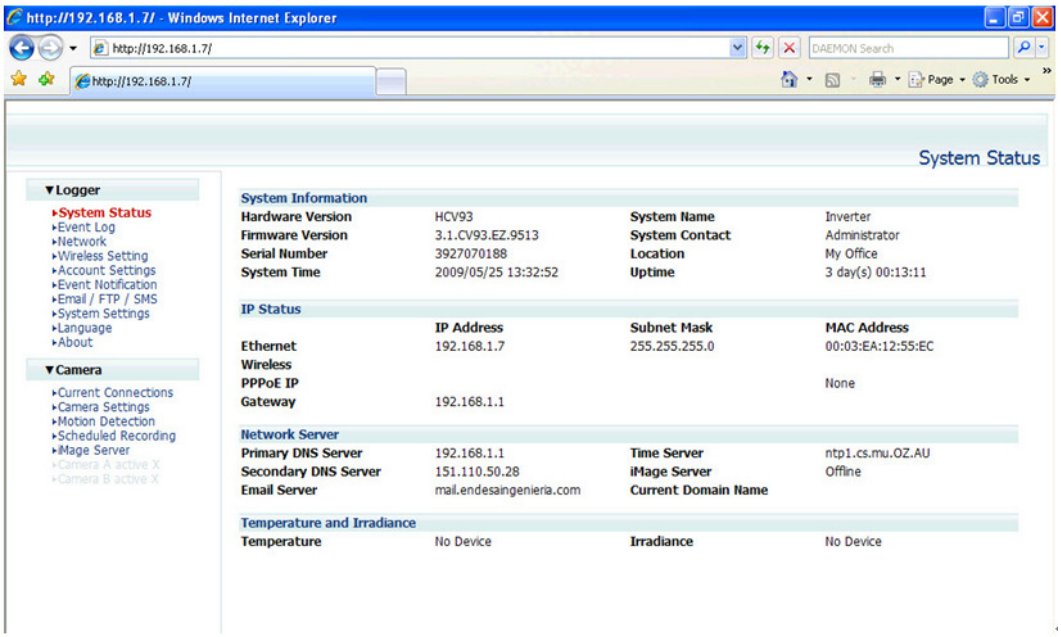


Fig.10 EZ Logger Lite System Status page

[1] Permission level is the authority level of operating this data logger. For detail information, refer to 3.2.5

i. System Information

This section shows general hardware information such as the Hardware and Firmware Version, the serial number, current / local System Time, the system name, contact, location and uptime.

ii. IP Status

This section shows the network information. The MAC Address is unique to each EZ Logger Lite.

iii. Network Server

This section shows information of Network Server of DNS (Domain Name Server), Time Server, Email Server and Image Server.

iv. Temperature and Irradiation

Whenever the specified Temperature and Irradiation sensor is connected to EZ Logger Lite, this section is showing the temperature and irradiation measured by the sensor

3.2.2 Event Log

This section will keep a record of all events that detected by EZ Logger Lite. The user can Refresh, Clear or Save the log file. There is also an option to sort the logs according to “Level” or “Type”. EZ Logger Lite can log up to 2,000 events.

Once the number of events has reached the maximum limit, the earliest event will be replaced for each new event logged.

Note: If you do not have Administrator privilege, the **User Name** and **IP Address** will be hidden. *Example*: Camera A: user ******** connected from IP: *.*.*.*

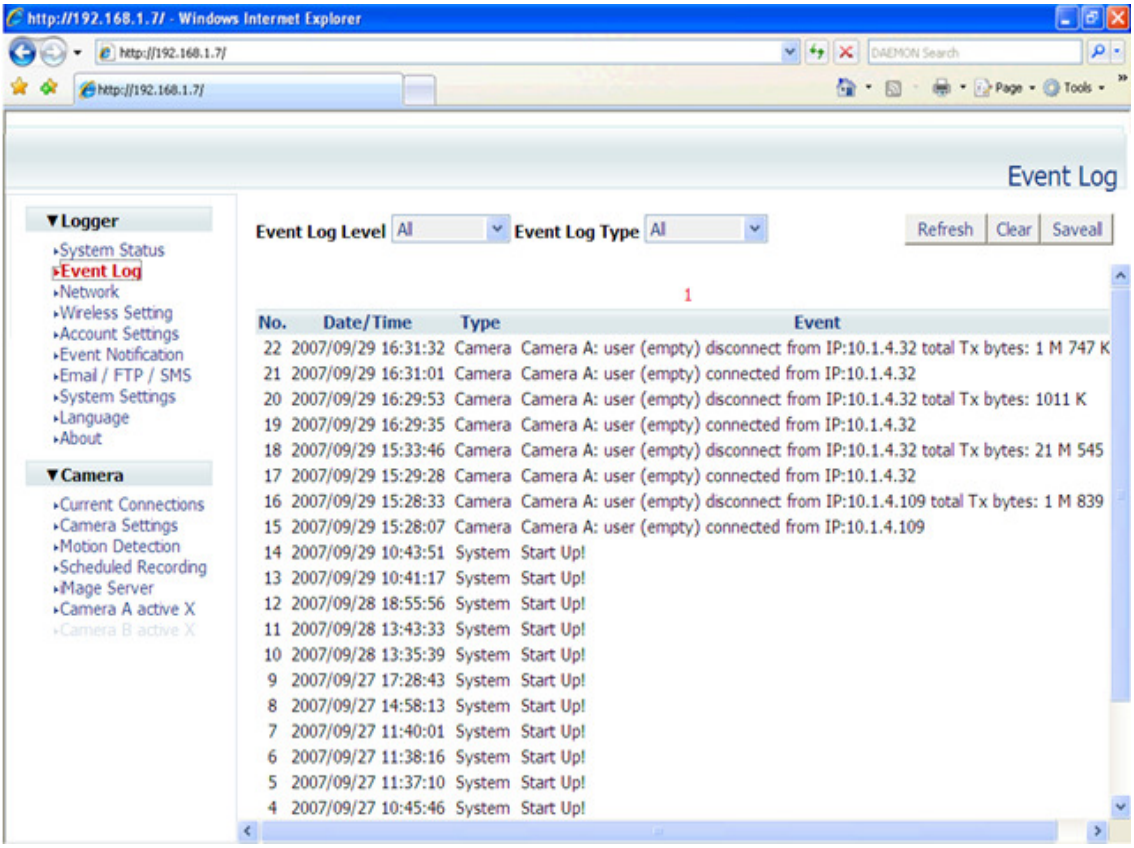

http://192.168.1.7/ - Windows Internet Explorer
Event Log
Logger
System Status
Event Log
Network
Wireless Setting
Account Settings
Event Notification
Email / FTP / SMS
System Settings
Language
About
Camera
Current Connections
Camera Settings
Motion Detection
Scheduled Recording
Mage Server
Camera A active X
Event Log Level All
Event Log Type All
Refresh
Clear
Saveall
No. Date/Time Type Event
22 2007/09/29 16:31:32 Camera Camera A: user (empty) disconnect from IP:10.1.4.32 total Tx bytes: 1 M 747 K
21 2007/09/29 16:31:01 Camera Camera A: user (empty) connected from IP:10.1.4.32
20 2007/09/29 16:29:53 Camera Camera A: user (empty) disconnect from IP:10.1.4.32 total Tx bytes: 1011 K
19 2007/09/29 16:29:35 Camera Camera A: user (empty) connected from IP:10.1.4.32
18 2007/09/29 15:33:46 Camera Camera A: user (empty) disconnect from IP:10.1.4.32 total Tx bytes: 21 M 545
17 2007/09/29 15:29:28 Camera Camera A: user (empty) connected from IP:10.1.4.32
16 2007/09/29 15:28:33 Camera Camera A: user (empty) disconnect from IP:10.1.4.109 total Tx bytes: 1 M 839
15 2007/09/29 15:28:07 Camera Camera A: user (empty) connected from IP:10.1.4.109
14 2007/09/29 10:43:51 System Start Up!
13 2007/09/29 10:41:17 System Start Up!
12 2007/09/28 18:55:56 System Start Up!
11 2007/09/28 13:43:33 System Start Up!
10 2007/09/28 13:35:39 System Start Up!
9 2007/09/27 17:28:43 System Start Up!
8 2007/09/27 14:58:13 System Start Up!
7 2007/09/27 11:40:01 System Start Up!
6 2007/09/27 11:38:16 System Start Up!
5 2007/09/27 11:37:10 System Start Up!
4 2007/09/27 10:45:46 System Start Up!

Fig.11 EZ Logger Lite Event Log: Administrator privilege.

3.2.3 Network

This option determines EZ Logger Lite **Network** settings. To enter, click “Network” on the MENU bar. All the settings are explained below.

i IP Address

By default, the IP address acquisition is set to using DHCP.

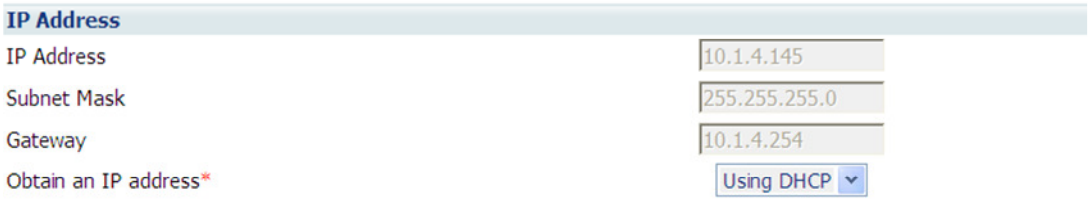


Fig.12 EZ Logger Lite IP Address Settings

IP Address

This determines EZ Logger Lite LAN IP address.

Subnet Mask

Enter EZ Logger Lite **Subnet Mask**. The value is normally 255.255.255.0

Gateway

This item is to set EZ Logger Lite Gateway.

To learn more about the above, see **Appendix C: IP address, Subnet and Gateway**

Obtain an IP address

This allows the user to choose either to set EZ Logger Lite LAN IP address MANUALLY or using DHCP (default).

Note:
Click **Apply** to confirm. EZ Logger Lite will reboot. You **MUST** now manually enter the NEW IP address in your Browser in order to open the Web Interface.

ii DNS Server IP

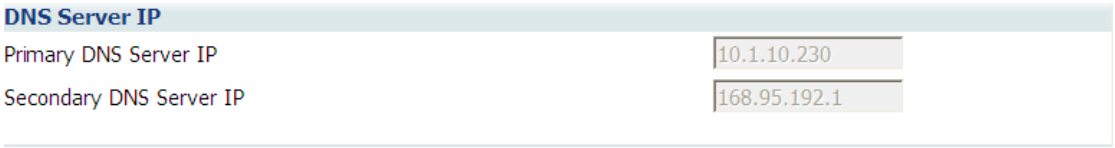


Fig.13 EZ Logger Lite DNS Server IP

Primary DNS Server IP

This item sets EZ Logger Lite primary DNS Server IP address. By default this is set to 168.95.1.1

Secondary DNS Server IP

Use this to set EZ Logger Lite **Secondary DNS Server IP** address EZ Logger Lite will use the **Secondary DNS Server IP** address if the **Primary DNS Server IP** address is not working. The default IP is 168.95.192.1

iii LAN Port Number

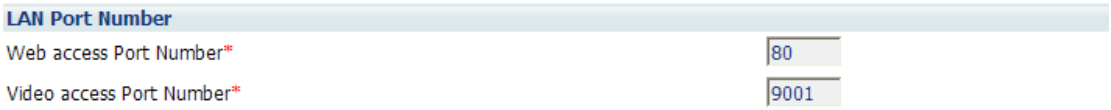


Fig.14 EZ Logger Lite LAN Port Settings

Web access Port Number

This determines the LAN port from which the webpage (using HTTP protocol) is accessible thru your Router. By default the LAN port number is **80**.

If this port is changed other than 80, say to 82, then form of http://xxx.xxx.xxx.xxx**:82** (where xxx.xxx.xxx.xxx is EZ Logger Lite LAN IP address as shown on the LCD) must be used in order to access EZ Logger Lite web interface in LAN.

Video access Port Number

This determines the LAN port from which the video image (using UDP protocol) is streamed thru your Router. By default the LAN port number is **9001**.

iv Dynamic DNS

This is a free service that allows the user to alias a dynamic (or floating) IP address to a static hostname. No matter how many times your ISP change the IP, you will be able to locate EZ Logger Lite through Internet.

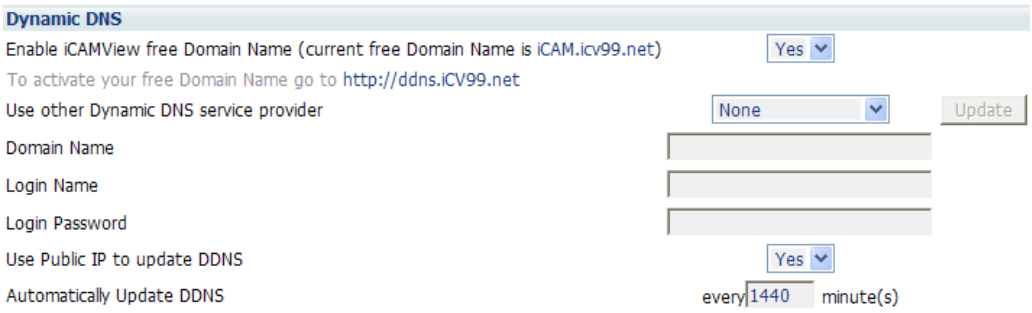


Fig.15 EZ Logger Lite Dynamic DNS settings

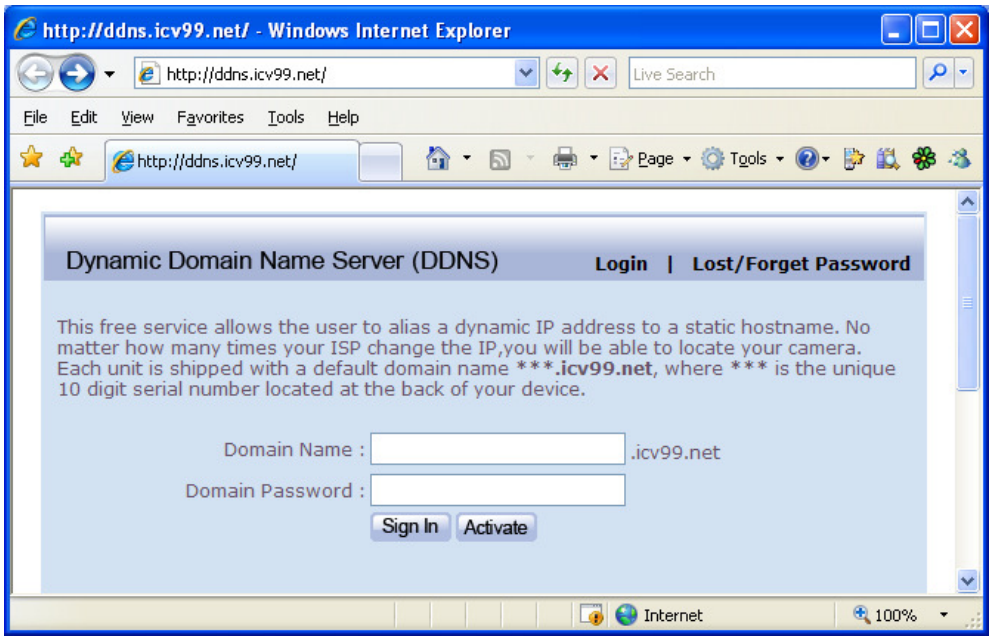
Enable EZ Logger Lite free Domain Name (current free Domain Name is *)**

Each EZ Logger Lite unit is shipped with a default domain name *****.icv99.net**, where ******* is the unique 10 digit serial number located at the back of EZ Logger Lite.

To activate this feature;

1. Select **Enable** from the drop-down menu and click **Apply**.

2. Activate the feature by logging on to http://ddns.iCV99.net and click the **Activate** button.

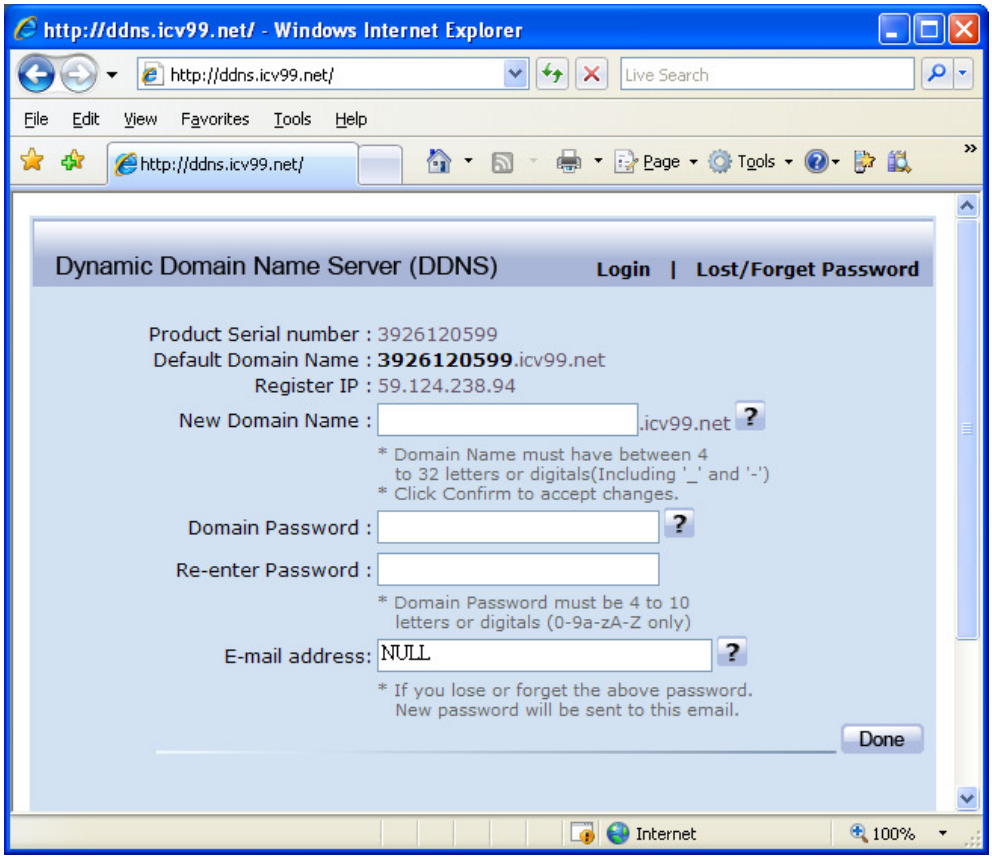

http://ddns.icv99.net/ - Windows Internet Explorer
http://ddns.icv99.net/
Live Search
File Edit View Favorites Tools Help
Page Tools
Dynamic Domain Name Server (DDNS)
Login | Lost/Forget Password
This free service allows the user to alias a dynamic IP address to a static hostname. No matter how many times your ISP change the IP,you will be able to locate your camera. Each unit is shipped with a default domain name ***.icv99.net, where *** is the unique 10 digit serial number located at the back of your device.
Domain Name :
.icv99.net
Domain Password :
Sign In
Activate
Internet
100%

3. Register by entering the Product **Serial Number** and **Master Password** (this is shown at the back of the EZ Logger Lite unit) and click **Next >>**.

http://ddns.icv99.net/ - Windows Internet Explorer
http://ddns.icv99.net/
Live Search
File Edit View Favorites Tools Help
Page Tools
Dynamic Domain Name Server (DDNS)
Login | Lost/Forget Password
Please enter the following information to activate your DDNS account
Product Serial Number :
Product Master Password :
Once Serial Number and Password are registered click Next >>
to set your own Domain Name, Domain Password and E-mail.
Next >>
Done
Internet
100%

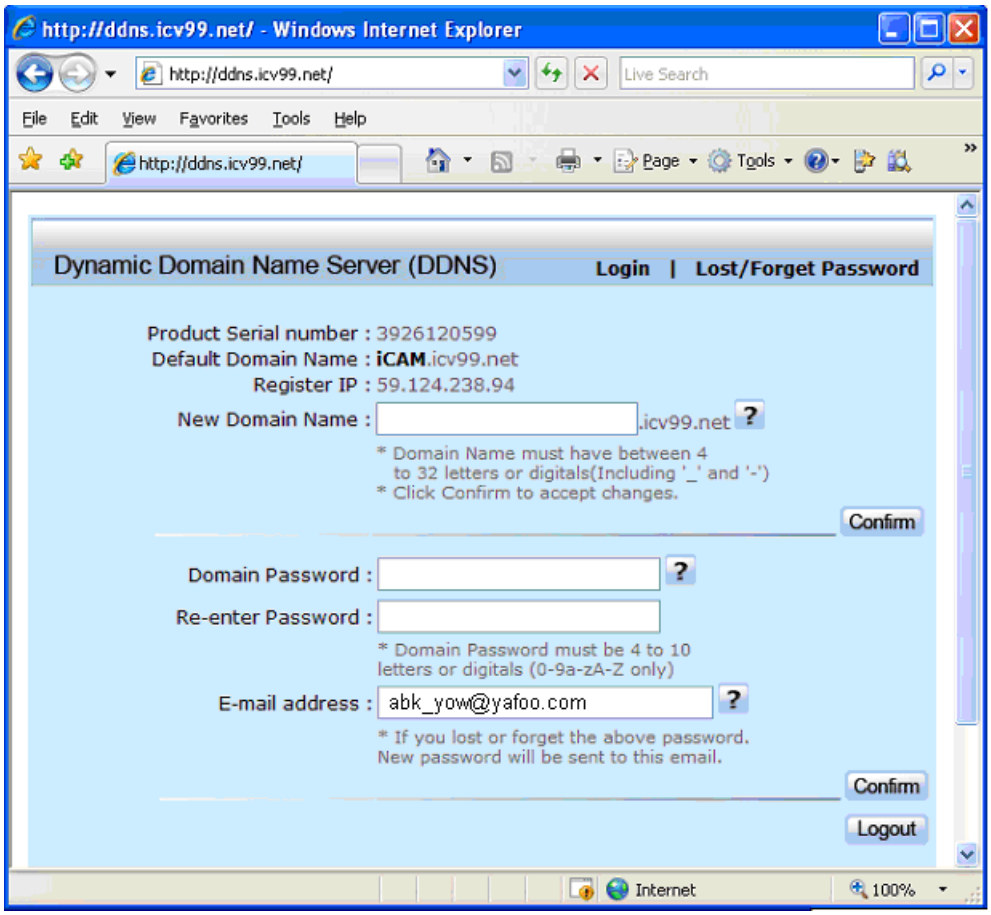
Note:
In order to Activate the unit, EZ Logger Lite DDNS feature MUST be **Enabled** first under Basic Settings → Network → EZ Logger Lite Dynamic DNS. Remember to click **Apply** to confirm.

4. Once registered, user can enter a New Domain Name, set a Domain password and E-mail address. Click **Done** to save changes.


http://ddns.icv99.net/ - Windows Internet Explorer
http://ddns.icv99.net/
Live Search
File Edit View Favorites Tools Help
Page Tools
Dynamic Domain Name Server (DDNS)
Login | Lost/Forget Password
Product Serial number : 3926120599
Default Domain Name : 3926120599.icv99.net
Register IP : 59.124.238.94
New Domain Name : .icv99.net
* Domain Name must have between 4
to 32 letters or digitals(Including '_' and '-')
* Click Confirm to accept changes.
Domain Password :
Re-enter Password :
* Domain Password must be 4 to 10
letters or digitals (0-9a-zA-Z only)
E-mail address: NULL
* If you lose or forget the above password.
New password will be sent to this email.
Done
Internet
100%

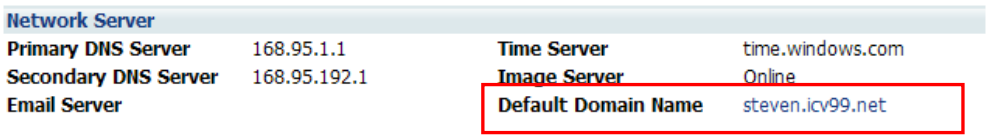
Note:
Enter a valid Email address. In the event you have forgotten the password to your DNS account, a new password will be sent to this email address upon request.

5. Registration complete. Account details shown as follows;


http://ddns.icv99.net/ - Windows Internet Explorer
http://ddns.icv99.net/
Live Search
File Edit View Favorites Tools Help
Page Tools
Dynamic Domain Name Server (DDNS)
Login | Lost/Forget Password
Product Serial number : 3926120599
Default Domain Name : iCAM.icv99.net
Register IP : 59.124.238.94
New Domain Name : .icv99.net
* Domain Name must have between 4 to 32 letters or digitals(Including '_' and '-')
* Click Confirm to accept changes.
Confirm
Domain Password :
Re-enter Password :
* Domain Password must be 4 to 10 letters or digitals (0-9a-zA-Z only)
E-mail address : abk_yow@yafoo.com
* If you lost or forget the above password. New password will be sent to this email.
Confirm
Logout
Internet
100%

Note:
In order to view from remote, Port Forwarding must be configured at your Router. See Appendix A for more information.

6. With the registration complete, the following additional information can be seen under **Information → System Status → Network Status.**



Use other Dynamic DNS service provider

In addition to http://ddns.iCV99.net, EZ Logger Lite can be configured to register with other Dynamic DNS providers. The following free DDNS service providers are supported;

- 3322.org

- dyn.chamber.ee
- DHS International
- DynDNS Free
- DynDNS Custom
- myDDNS
- ZiVE

Click **Update** to get latest list of Service Providers.

Note:
The number of available DDNS service providers depends on the region EZ Logger Lite is purchased.

In general, to register a Domain Name;

a. Go to the DDNS provider website listed above.
b. Register a new user account and password with the DDNS provider.
c. Choose a Domain Name to point to your current Dynamic IP
d. Enter information obtained in (b) and (c) into EZ Logger Lite DDNS fields.

Domain Name

This is the Domain Name you have created from the above selected DDNS provider.

Login Name

This is the Login / Account name that you have created with the selected DDNS provider.

Login Password

Enter the Password you have assigned to your DDNS Account.

Use Public IP to update DDNS

Choose **Yes** to ensure that EZ Logger Lite uses the WAN / Public IP to update the selected DDNS server.

Automatically update DDNS

This field allows the user to determine the interval (in minutes) between updates. Choose an interval between 1 to 10080 (7 days) minutes.

Note:
Setting a low interval value may result in a ban by your DDNS provider.

v PPPoE

Use this option to allow EZ Logger Lite to connect to the Internet directly using your xDSL modem. Once set-up, EZ Logger Lite will connect directly to the Internet without going through a router. The LCD will display the current WAN / Public IP instead of the LAN IP Address.

Fig.16 EZ Logger Lite PPPoE setting

When Connection should be made

Disabled : Default setting.

Connect always : EZ Logger Lite will automatically dial up and maintain continuous connection.

Automatically reconnect

Enter the interval between each reconnection and number of automatic reconnections. The reconnection interval can be set between 30 to 9999 seconds.

Login Name

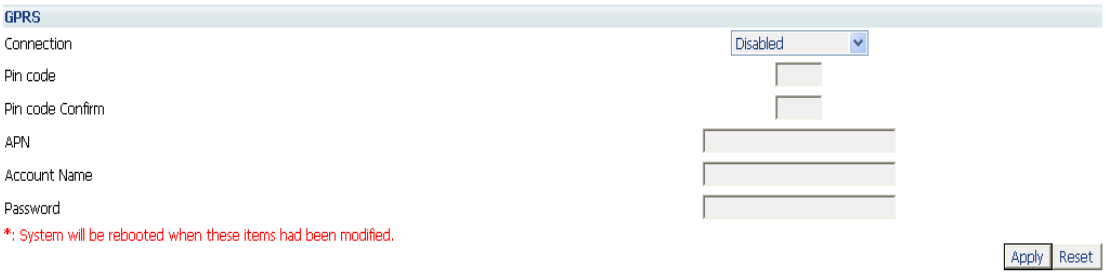
Enter the login name assigned by your ISP.

Login Password

Enter the password assigned by your ISP.

vi GPRS

In case logger is connected with GPRS modem, the following function can be used for GPRS network



Connection

Select Disable or Always connected to active the connection to GPRS network.

Pin code

Enter the pin code of your GSM/GPRS card. This code is assigned by your GSM/GPRS Company.

Pin code Confirm

Enter the pin code same as above again.

APN

Enter the APN by your GSM/GPRS card.

Account Name
Enter the login name assigned by your GSM/GPRS card.

Password
Enter the password assigned by your GSM/GPRS card.

Note:
Pay attention to enable this function, it may cost expensive communication charge to you. Contact with your GPRS provider for understand charge rate.

3.2.4 Wireless Setting

This option determines EZ Logger Lite **Wireless Network Settings**. This option is only configurable if a compatible wireless USB Adapter is attached. To set this up, you'll first need to use the LAN IP (as shown on the LCD) to access EZ Logger Lite.

Note:
Once the wireless configuration is setup, the wireless IP address will be shown on the LCD instead of the LAN IP. To check the LAN IP thru the LCD, unplug the wireless USB adapter.

i IP Address

Refer to section 3.2.3.4 (i) above. This will be the ***wireless*** LAN IP. It will be different from the LAN IP.

ii DNS Server IP

Refer to section 3.2.3.4 (ii) above. This will be the ***wireless*** DNS server IP. It can be different from that of the LAN IP.

iii Wireless

Connect a compatible Wireless USB Adapter to enable this feature.

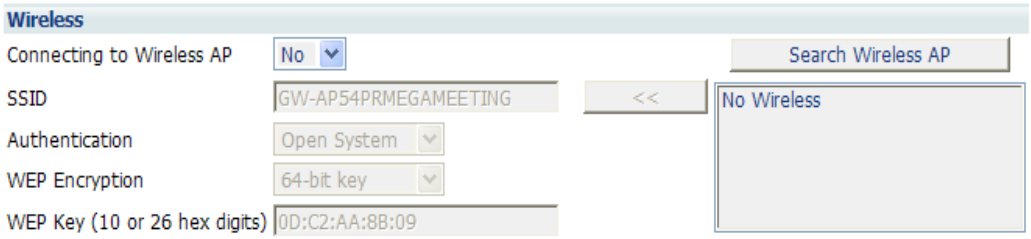


Fig.17 EZ Logger Lite Wireless Setup

Connect to Wireless AP

When a compatible Wireless USB Adapter is connected, select **Yes** and click **Search Wireless AP** button to have it search for nearby Access Points (AP).

Once detected all available AP will be displayed on the table to the right. Select the preferred AP and click **<<** button to add it to the **SSID** field.

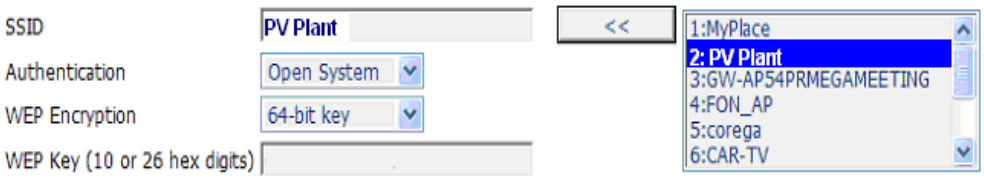


Fig.18 Wireless AP detected and preferred AP selected

Authentication

Select either; Open System or Shared Key. Check the AP for the appropriate authentication method in use.

WEP Encryption

Select from either **none**, **64-bit key** or **128-bit key**. Check the AP for the appropriate encryption used.

WEP Key (10 or 26 hex digits)

Key in the password used for the WEP encryption

3.2.5 Account Settings

This webpage allows you to set up to Eight (8) different user accounts with different access permission level to EZ Logger Lite.

Note:
Only **Administrator** can edit the account stated in this section.

i User Account

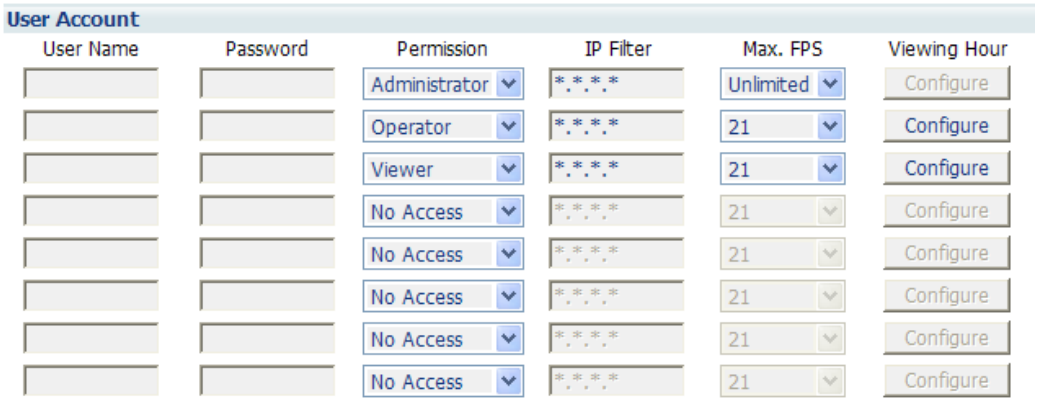


Fig.19 User Account Settings

User Name

Assign a **User Name** or "account" name. The administrator can set a name consisting up to 32 case sensitive characters.

Password

Assign a password to the account. The administrator can set up to 32 case sensitive passwords.

Permission

This sets the access level to individual user accounts.

Administrator: An Administrator has full access including write permission to all menus and sub-sections. Only an Administrator can see the **User Name** and **IP** a**ddress** fields or set the camera access **Permit Hours** to Operator or Viewer accounts.

Operator: The user can access all menus, but does not have permission to amend the data fields.

Viewer: The user can only view camera within the time specified in **Permit Hours**. The user does not have write permission, can only view **Camera A**/**B** and read the **Information** section.

No Access: This disables either of the above two permission levels given to a user.

Note:
An **Administrator** account must be set before setting up either an **Operator** or **Viewer** account. An administrator account fields, in this case, cannot be left empty.

IP Filter

Use this feature to ensure that the user only login from the specified IP address. Leave as ***.*.*.*** to allow the user to log into the account from any place.

Example:
Entering **192.168.1.*** will only allow User to access from **192.168.1.xxx** IP addresses.

Max FPS

This allows the Administrator to limit the bandwidth allocated to each account. The Administrator can set a figure of **3** to **Unlimited** FPS ("frames per second").

Viewing Hours

When the Permission level is set to either **Operator** or **Viewer**, the Administrator can set the time to which the camera can be viewed.

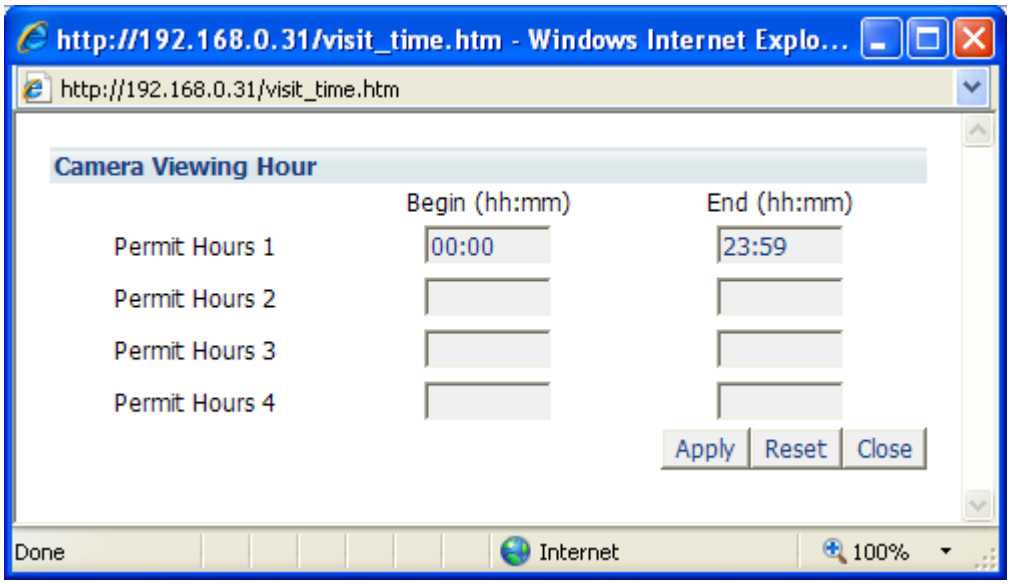


Fig.20 EZ Logger Lite Permit Hours Configuration

Click **Configure** to bring up the Camera Viewing Hour window. The Administrator can set up to 4 different **Permit Hours** (in 24hr format). Click **Apply** to save. Click **Close** to exit without saving.

Note:
The **Reset** button will revert the fields to initial values prior to any changes being made. It does not undo changes once **Apply** has been clicked.

ii Block IP address

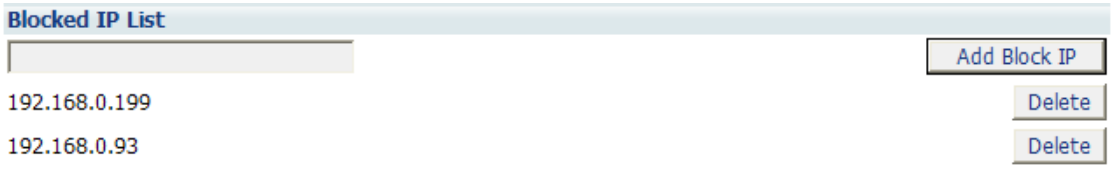


Fig.21 Blocking LAN IP address

Blocked IP List

This allows the Administrator to block specific LAN IP address from accessing EZ Logger Lite. Manually enter the IP address in dotted decimal notation and click **Add Block IP**. The blocked LAN IP address will be listed at the bottom.

Click **Delete** to remove it from the list.

3.2.6 Event Notification

This section determines the type of event that will be included if an email notification is sent by EZ Logger Lite.

Note:
Administrator privilege is required to configure this section.

i Event Notification

A total of 8 email recipients can be assigned to receive notification.

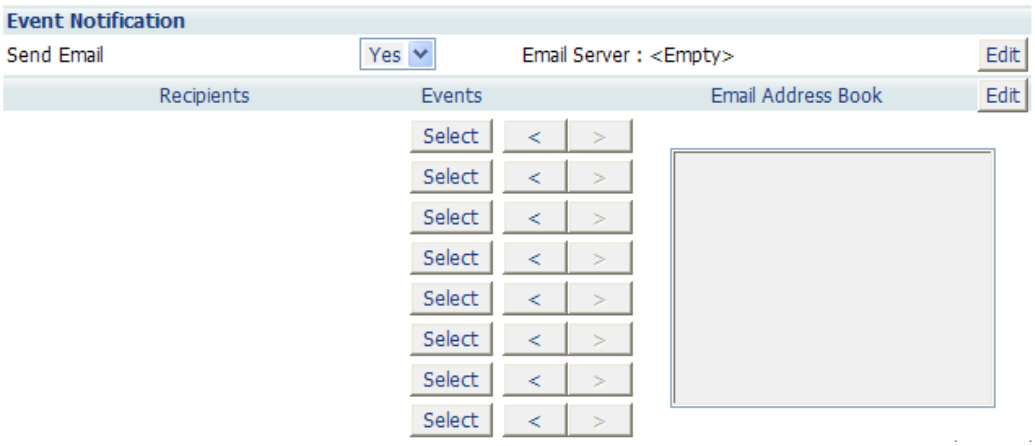


Fig.22 EZ Logger Lite Event Notification Page

Send Email

Select **Yes** to activate this feature. Default is **No**.

Email Server

A valid **Email Server**, User name and password must be setup for this feature to work. If this has not been setup, click **Edit** and to go to **Email** / **FTP** setup page. (Refer to Section 3.2.7 below)

Note:
Email function can only work using standard Email Server (POP mail server) and not Web based Email Server, such as yahoo.com / msn.com

Email Address Book

The available Email addresses are listed here. Refer to section 3.2.7 on how to enter an Email address to the **Address Book**.

To add an email address not already in the list, click **Edit**. EZ Logger Lite will ask you to save your configuration prior to leaving this page.

Recipients

Up to 8 valid email accounts can receive **Email Notification**. To add an email address to the recipient list, click **<**To remove, highlight and click **>**.

Note:
Only Email addresses that are listed in the **Email Address Book** can be added.

Events

This section determines the events that the selected recipient(s) will receive by email. There are four types of events; Information, Warning, Error and Network. Click **Yes or No** on related events so that the recipients will be notified.

Information	Yes	No
Routine report	○	○
Logger Start up	○	○
PPPoE connection successful	○	○
Registration with DDNS server completed	○	○
User logged in to view camera	○	○
User logged out from camera	○	○
Image recording of camera A	○	○
Image recording of camera B	○	○
Warning	Yes	No
Fac out of range	○	○
Zac out of range	○	○
Inverter Memory full	○	○
Vac out of range	○	○
The fan is locked	○	○
Temperature high	○	○
No-Utility	○	○
Delta Zac out of range	○	○
PV insulation low	○	○
Vpv high	○	○
Network	Yes	No
USB memory full	○	○
Server address can not be resolved	○	○
Connection with Email server failed	○	○
FTP server has no response	○	○
FTP server connection closed abnormally	○	○
Connection with DDNS server failed	○	○
DDNS server has no response	○	○
DDNS server connection closed abnormally	○	○
Connection with time server failed	○	○
Motion detect camera A	○	○
Motion detect camera B	○	○
Server address was not specified	○	○
Invalid username or password entered for FTP server	○	○
FTP server no such file or directory	○	○
Invalid username or password entered for DDNS server	○	○
Registration with DDNS server failed	○	○
DDNS domain name does not exist	○	○

SelectAll | ClearAll | Apply

Fig.23 Event Selection List- Network

Click **Select All** or **Clear All** to activate or deactivate all events; click **Apply** to confirm selection.

Click to close the window and return to the **Event Notification** page.

Note:
The Image Recording and Motion Detection notification function here will only send an email notification WITHOUT any picture attached. For email notification with images, the Administrator has to setup the **Motion Detection** and **Image Recording** page (see Section 4.3 and 4.4)

Once the events are selected, the mail receipts will get mails similar to below figures.

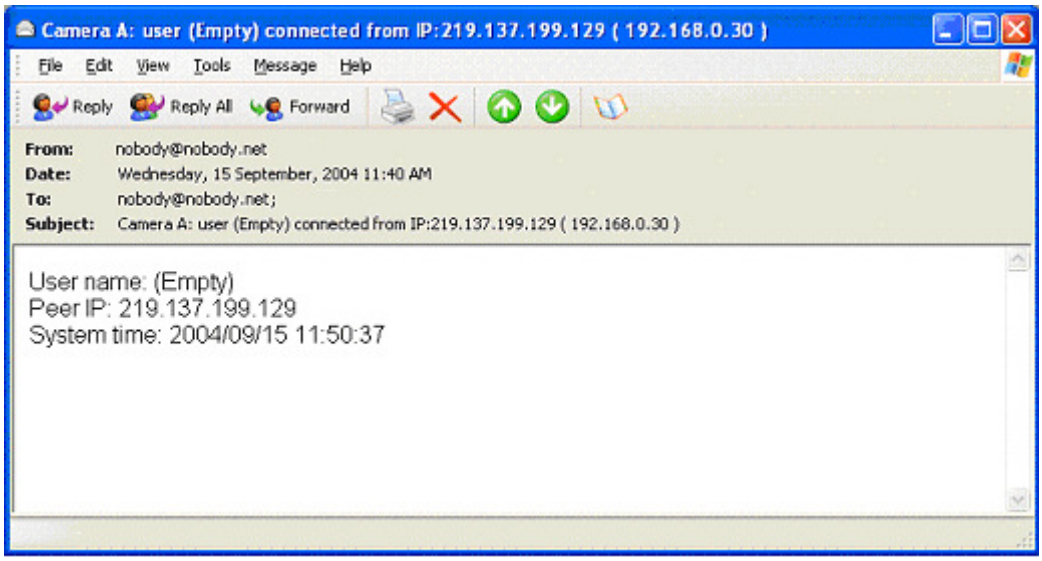

Camera A: user (Empty) connected from IP:219.137.199.129 (192.168.0.30)
File Edit View Tools Message Help
Reply Reply All Forward
From: nobody@nobody.net
Date: Wednesday, 15 September, 2004 11:40 AM
To: nobody@nobody.net;
Subject: Camera A: user (Empty) connected from IP:219.137.199.129 (192.168.0.30)
User name: (Empty)
Peer IP: 219.137.199.129
System time: 2004/09/15 11:50:37

Fig.24 Event Notification: User Login Details (Date, Time, Camera & IP)

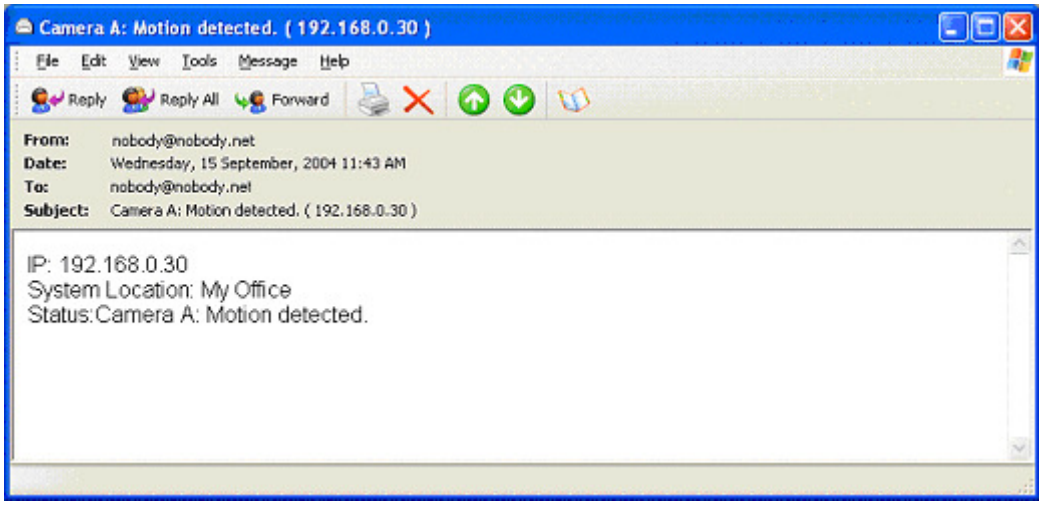

Camera A: Motion detected. (192.168.0.30)
File Edit View Tools Message Help
Reply Reply All Forward
From: nobody@nobody.net
Date: Wednesday, 15 September, 2004 11:43 AM
To: nobody@nobody.net
Subject: Camera A: Motion detected. (192.168.0.30)
IP: 192.168.0.30
System Location: My Office
Status:Camera A: Motion detected.

Fig.25 Event Notification: Camera A Motion Detected

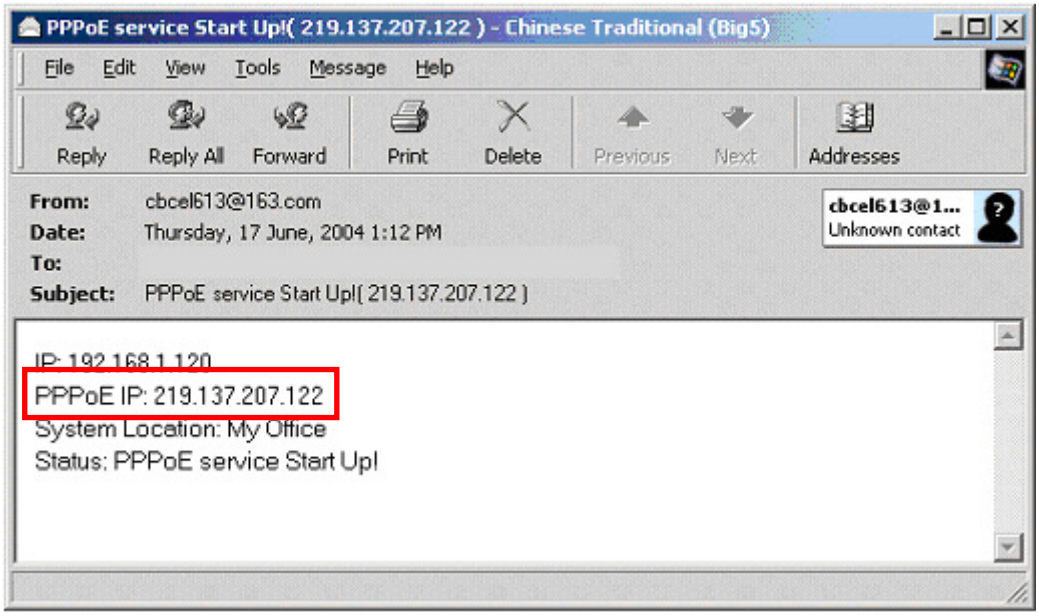

PPPoE service Start Up!(219.137.207.122) - Chinese Traditional (Big5)
File Edit View Tools Message Help
Reply Reply All Forward Print Delete Previous Next Addresses
From: cbcel613@163.com
Date: Thursday, 17 June, 2004 1:12 PM
To:
Subject: PPPoE service Start Up!(219.137.207.122)
cbcel613@1...
Unknown contact
IP: 192.168.1.120
PPPoE IP: 219.137.207.122
System Location: My Office
Status: PPPoE service Start Up!

Fig.26 Event Notification: PPPoE Connect Successful with Public IP shown

3.2.7 E-mail / FTP / SMS

This webpage sets up the necessary Email and FTP server information. The Administrator has to enter a valid Account Name and Password to the Email server and/or FTP server. This information has to be setup in order for Event Notification, Motion Detection and Image Recording function to work.

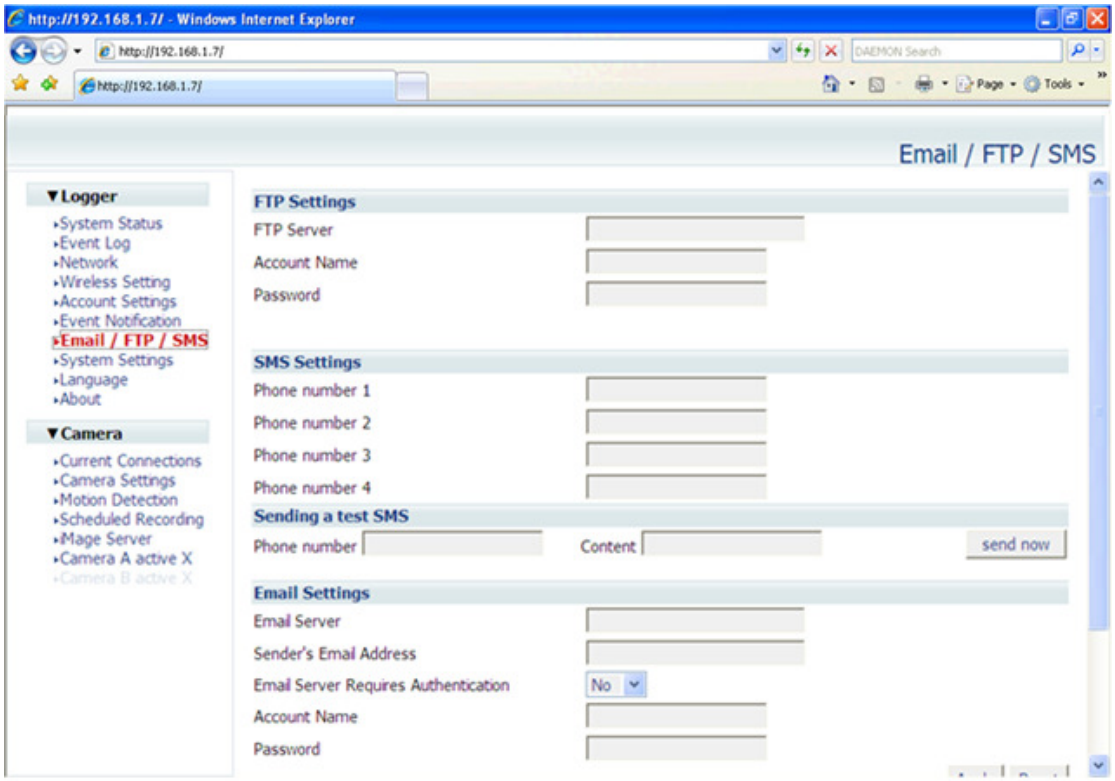


Fig.27 Email / FTP /SMS settings page

i FTP Settings

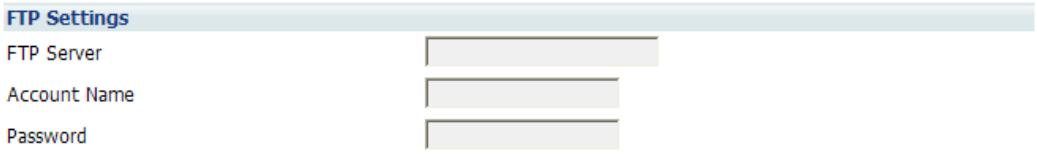


Fig.28 FTP settings

FTP Server

The Administrator will have to enter the full FTP server address here.

Account Name

Enter the FTP login account name here.

Password

Enter the account password. Click **Apply** to save the above settings.

ii Email Settings

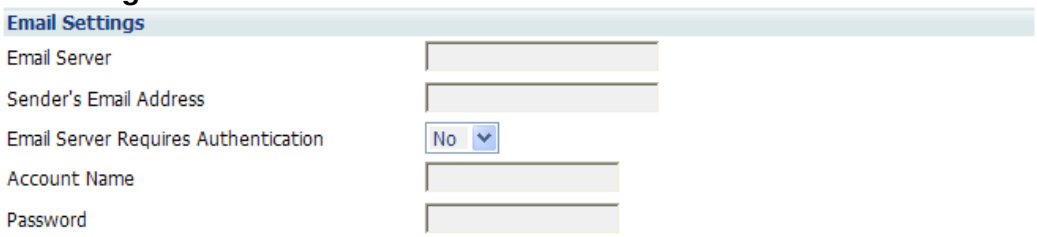


Fig.29 Email settings

iii E-mail Server

The Administrator will have to enter the Email server address here.

Note:
Email function can only work using standard Email Server and not Web based Email Server, such as yahoo.com

iv Sender's Email Address

Enter a valid email address where the Email will be sent from. Enter the full email address, for example: image@mailserver.com

Email Server Requires Authentication

Select **Yes** to enter the Account name and Password field below.

Account Name

Enter the full account name.

Note:
Check with your ISP on the Account Name format. This may be either the **Full Email Address** or just **Account Name**.

Password

Enter the password for the above account name. Click **Apply** to save the changes.

v Sending Test Mail

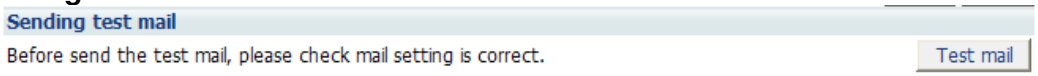


Fig.30 Sending a test mail

a. Click **Test Mail** to check that the **Email Setting** has been correctly configured.

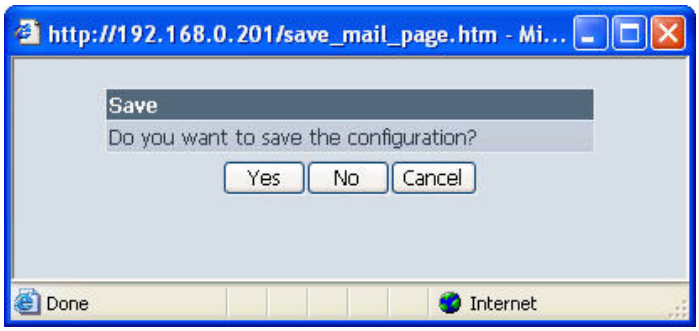


Fig.31 Saving configuration before sending a test mail

b. Click **Yes** to save configurations and proceed to the following window.

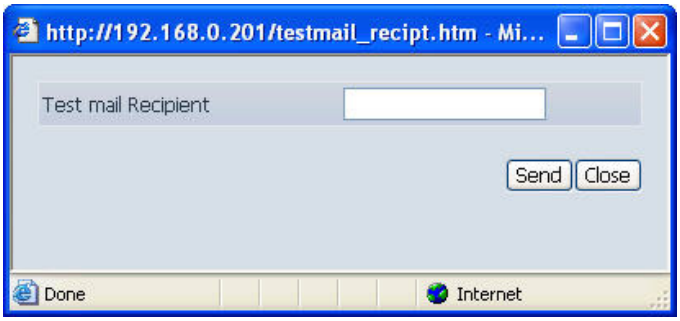


Fig.32 Test mail recipient email address

c. Enter the **Test mail Recipient** email address and click **Send**.

d. If the **Test Mail** is successful, the Recipient will receive the following email message.

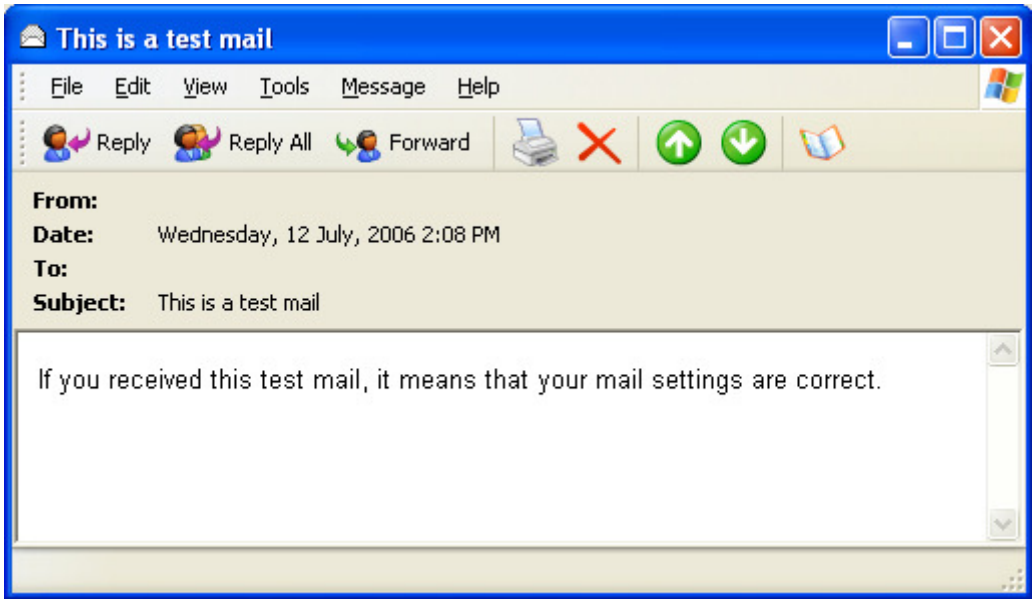

This is a test mail
File Edit View Tools Message Help
Reply Reply All Forward
From:
Date: Wednesday, 12 July, 2006 2:08 PM
To:
Subject: This is a test mail
If you received this test mail, it means that your mail settings are correct.

Fig.33 Confirmation email

The administrator can also check **Information → Event Log** for confirmation or failure.

No.	Date/Time	Type	Event
50	2006/07/12 06:13:09	Email	Test Mail has been sent.

Fig.34 Event Log: Test mail successful

No.	Date/Time	Type	Event
51	2006/07/12 06:16:41	Email	Failed to send test mail.

Fig.35 Event Log: Test mail failed

vi Email Address Book

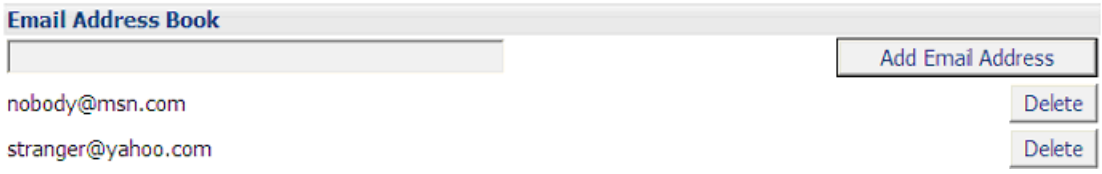


Fig.36 E-mail Address Book Entry

Enter an Email address in the box provided and click **Add Email Address**. The listed emails will be available for use in Event Notification, Motion Detection and Image Recording webpage.

Up to 20 email addresses can be stored.

Click **Delete** to remove an Email address.

3.2.8 System Settings

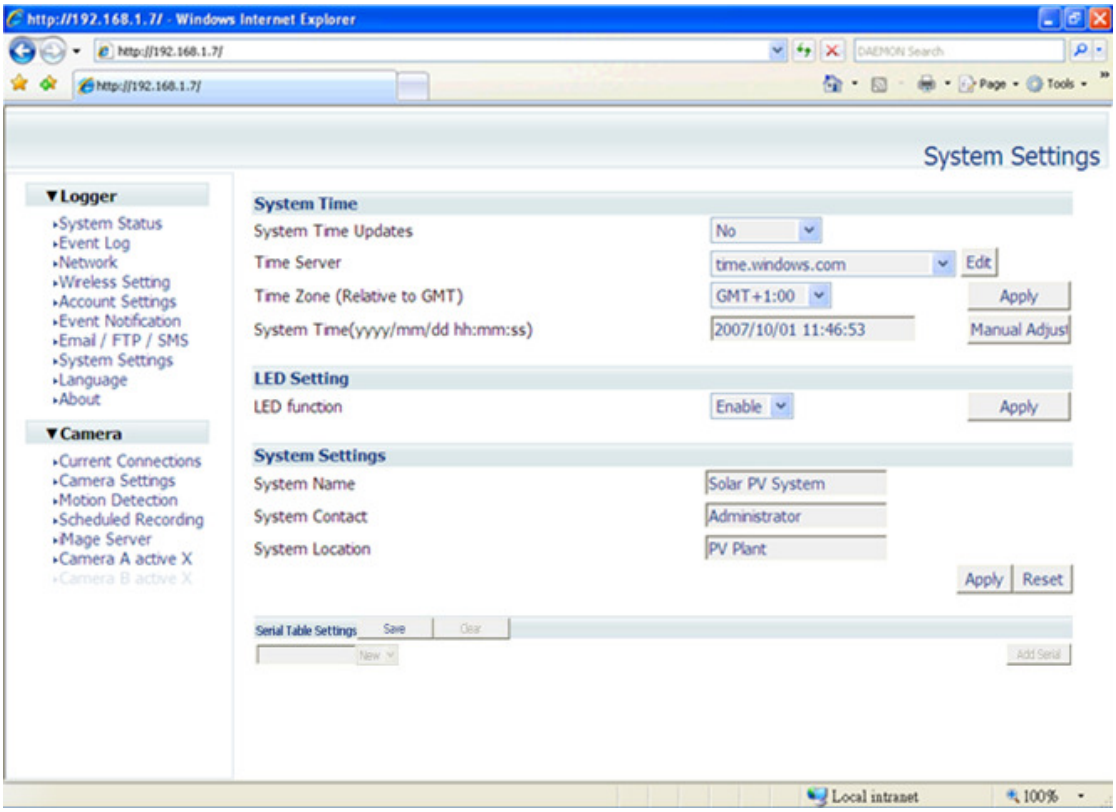


Fig.37 PV System Settings

i System Time

Fig.38 System Time

System Time Updates

The administrator can set an interval for time synchronization. Select from either; 1, 3, 12 hours or 1, 10 & 30 days.

Time Server

Choose the nearest **Time Server** to your EZ Logger Lite location. The Administrator can choose from the list of a maximum of 30 Time Servers.

To add a new **Time Server** the Administrator must first make space by deleting existing **Time Servers** from the list. Once this is done, the **Add** dialog box will appear as below. Click **Back** to return to the System Settings webpage.

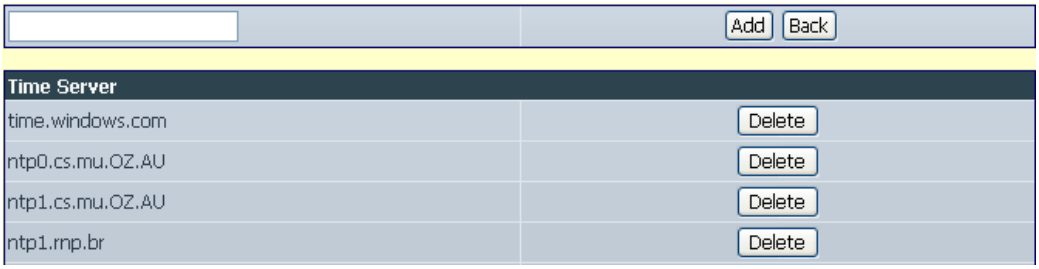


Fig.39 Add Time Server dialog box

Time Zone (Relative to GMT)

Select the appropriate time zone. Click **Apply** to save changes.

System Time (yyyy/mm/dd hh:mm:ss)

This section is to manually set EZ Logger Lite **System Time**. The format is pre-determined to: yyyy/mm/dd hh:mm:ss (in 24hr format). Click **Manual Adjust** to save the changes.

ii LED Settings

Fig.40 LED Settings

LED function

This function is not applicable.

iii System Settings

Fig.41 System Settings

System Name

Key in the system name

System Contact

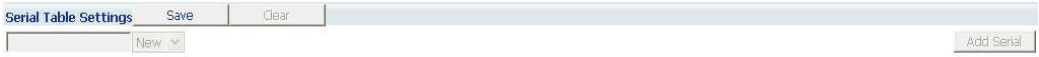
System contact person. Usually it is the PV system manager.

System Location

The location name of the PV system

iv Serial Table Settings

Serial Table Settings allow you to save inverter serial number with assigned address into EZ Logger Lite, so it's quicker to search all inverters next time.

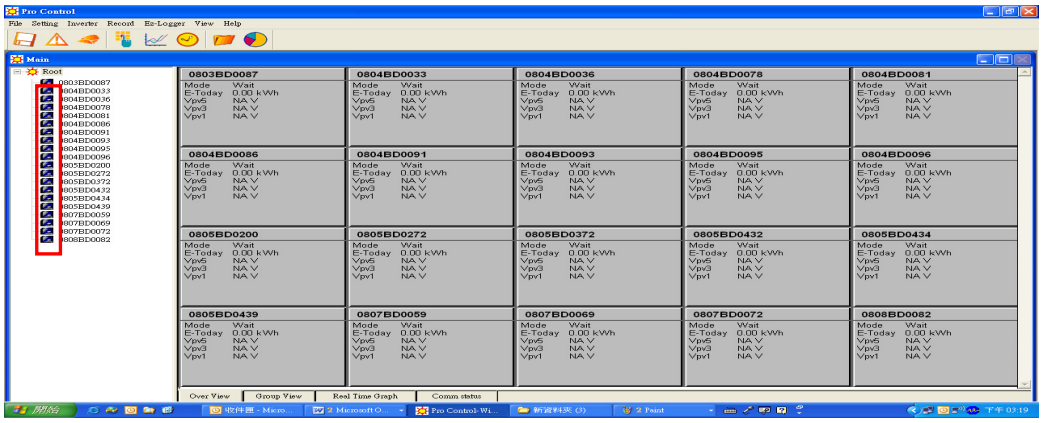


EZ Logger Lite save serial table procedure

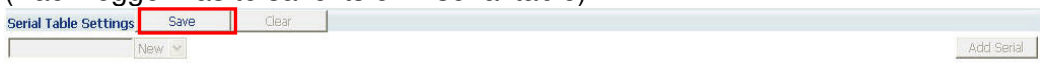
1. Start Pro Control to search all Inverters. (Connection status on the left pane

must be connected [blue icon], see screenshot below)

Note:
User must be aware of the total number of inverters connected to a EZ Logger Lite



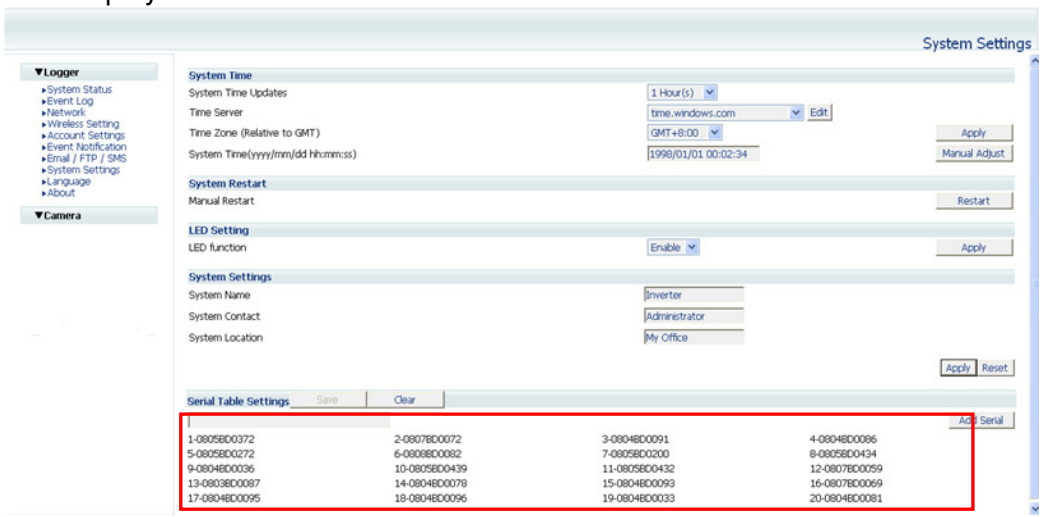
2. After one EZ Logger Lite found all inverters, browse the IP address of the EZ Logger Lite, select “system settings” on the left pane, select “Serial Table Settings” on the right pane, and click “Save” button to save inverter serial table (Each logger has to save its own serial table)



3.

A. When user click “Save” button, “Save” button will be grey out.

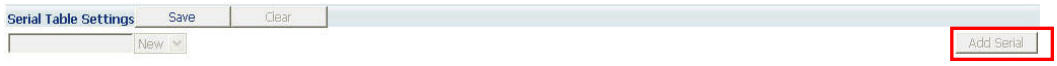
B. Click button to refresh web page, each inverter and its address will display.



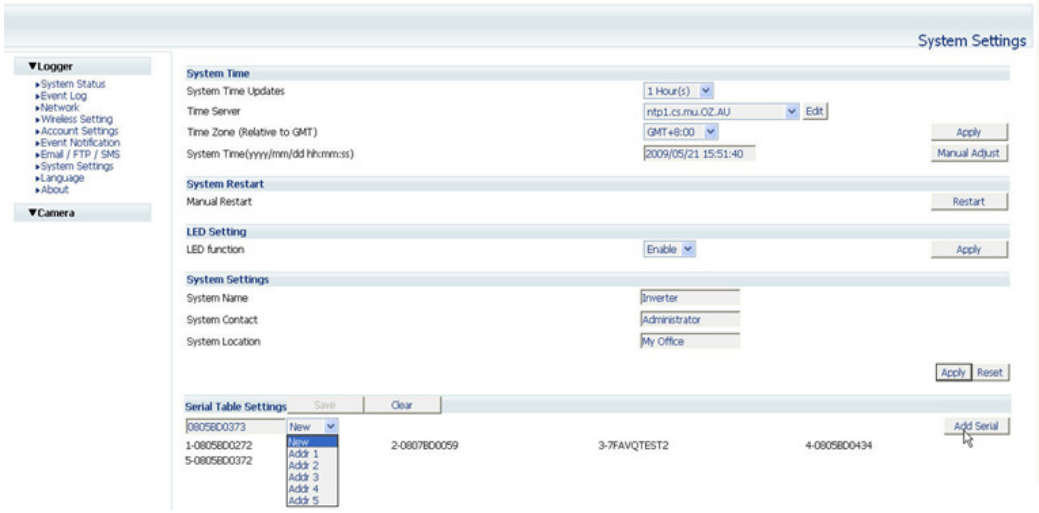
4. If EZ Logger Lite doesn’t find all inverters, click “Clear” button and let Pro Control search all inverters again.

v Add Serial button

Add Serial button allow you to key in inverter serial number manually or edit assigned address for debugging purpose

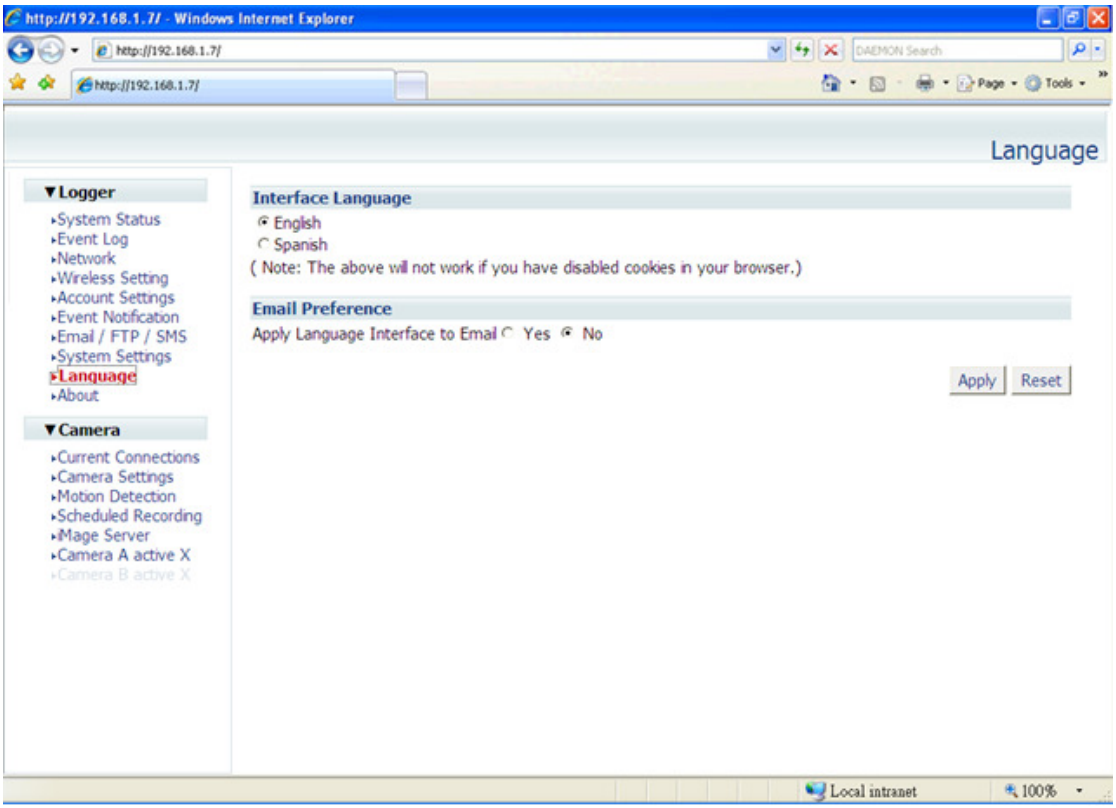


1. Click Save button to enable Add Serial button
2. Type Inverter Serial number in text field
3. Select address by clicking drop down list
4. Click Add Serial button



3.2.9 Language

Use this section is to set EZ Logger Lite language interface.



i Interface Language

At the moment, the user can choose the following versions;

- English
- Spanish

ii Email Preference

Check **Yes** to apply the language preference to emails sent from EZ Logger Lite.

3.2.10 About

The administrator can use this section to check firmware information, save/restore settings, and upgrade firmware and see manufacturer's details.

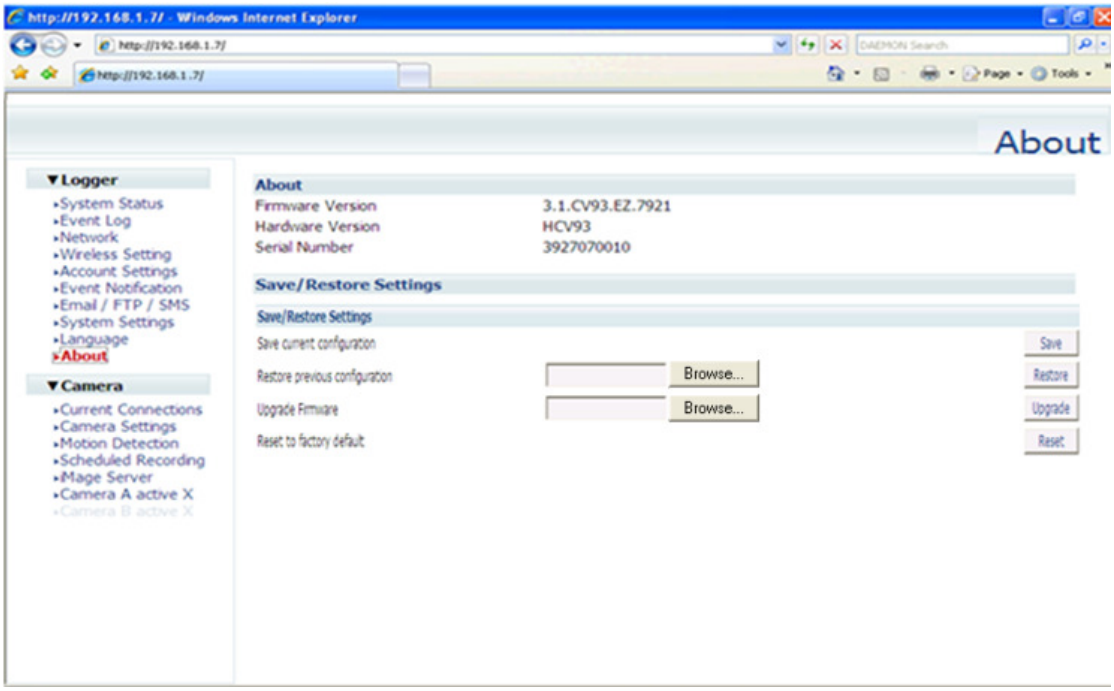


Fig.42 About page

i About

This shows the Firmware Version, Hardware Version and Serial Number.

ii Save / Restore Settings

Save Current Configuration

Click **Save** to save the configuration to your PC. The text file will have a default format of YYYY_MMDD_####**.cfg**. Administrator permission required.

Restore Previous Configuration

Use this function to restore a ***.cfg** configuration that has been saved earlier. Click **Browse**… to the location of the file and click **Restore**.

Reset to factory default

This function will reset all settings to its default value.

Note: Data Logger will request for the master login and password. This is printed at the back of the unit.

Chapter 4: Using the Web Interface to setup camera

Whenever there is a USB camera connected to Logger, user can see the photos and video from the data logger. This can help user to monitor the system by video. Besides, because of powerful “motion detection” function is build inside the device, you can also use this feature to do “Anti-thief” purpose.
Click on menu under **Camera** to start!

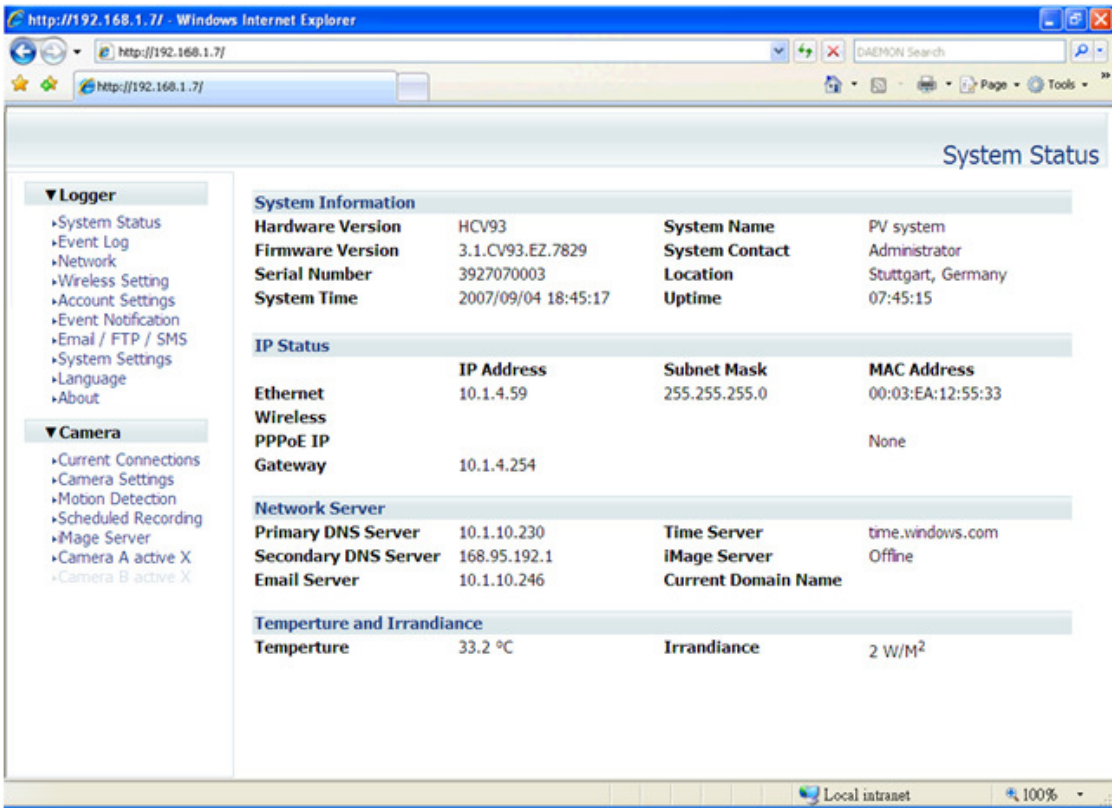


Fig.43 EZ Logger Lite Main Menu

When using a camera for EZ Logger Lite at the first time, check the following settings:

a. **Camera Settings → Anti Flicker** Check that this is set to the correct lighting frequency. Change this to **Outdoor** if you intend to point the camera outside. Click **Apply** to save the configuration.

b. Manually adjust the camera lens for best results.

4.1 Current Connections

The **Current Connections** page shows all the users currently viewing either Camera **A** or Camera **B**. It also lists the login time and total bytes received.

Note: Administrator privilege is required to view and use **Block IP**. Otherwise, the **IP** and **Account** details will be hidden and **Block IP** function disabled.

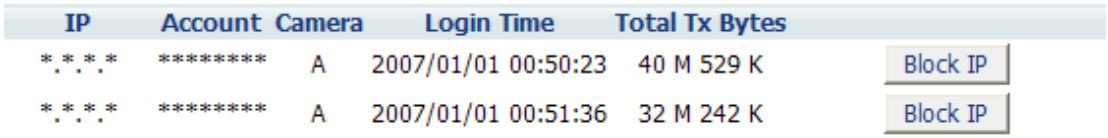


Fig.44 EZ Logger Lite Current Connections: Operator Permission

Click **Block IP** to block or disable the account of any errant viewer.

To unblock the IP go to **Basic Settings → Account Settings → Blocked IP List** and delete the blocked IP Address from the **Blocked IP List**.

4.2 Camera Settings

Use this section to set up the USB camera.

4.2.1 Setting up Camera A (or Camera B)

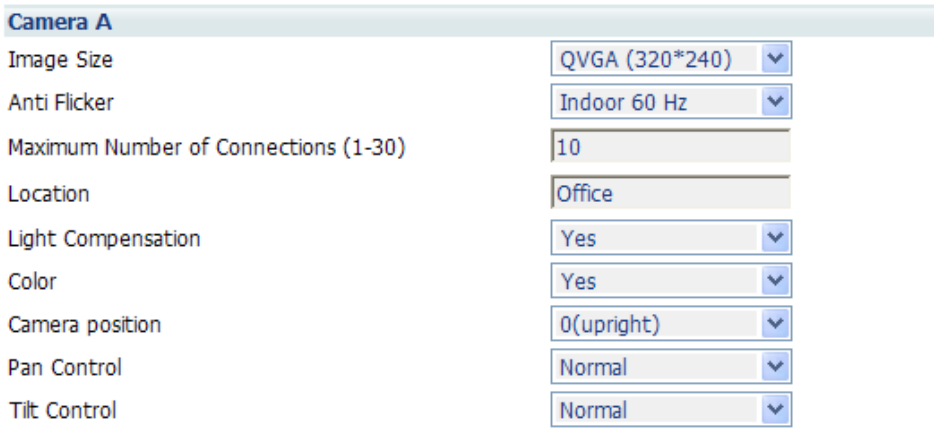


Fig.45 Individual Camera Configuration

Image Size

User can select the following image size;

QQVGA (160*120),
QCIF (176*144),
QVGA (320*240),
CIF (352*288),
VGA (640*480).

Anti Flicker

Choose between Indoors 50Hz, 60Hz or Outdoors. For best results when directing the camera to bright sources / windows, select **Outdoors**.

Note:
If you do not choose the right frequency, the image will flicker or lines will appear on the images.

Maximum Number of Connections (1-30)

Use this to limit the total number of users that can view this camera at the same time.

Location

Enter a suitable location / name for the camera. This information will be displayed when viewing video using Java VM.

Light Compensation

Choose **Yes** and EZ Logger Lite will increase the lighting of the image. This is useful when monitoring indoors.

Choose **No** if you do not want EZ Logger Lite to compensate for bright indoor lighting and view the images as is.

Color

Choose **Yes** for colourful and **No** for black and white display. Black and White display results in slightly faster FPS (Frames Per Second) video.

Camera Position

Use this option to right the image when EZ Logger Lite is installed on the ceiling or wall. Select either 0 degree (upright), 90, 180 (upside down), or 270 degree.

Pan Control

Use this function to reverse the Pan direction.

Tilt Control

Use this function to reverse the Tilt controls, if necessary.

Note:
Always click **Apply** to save any changes made. Otherwise, the changes will be lost.

4.3 *Motion Detection*

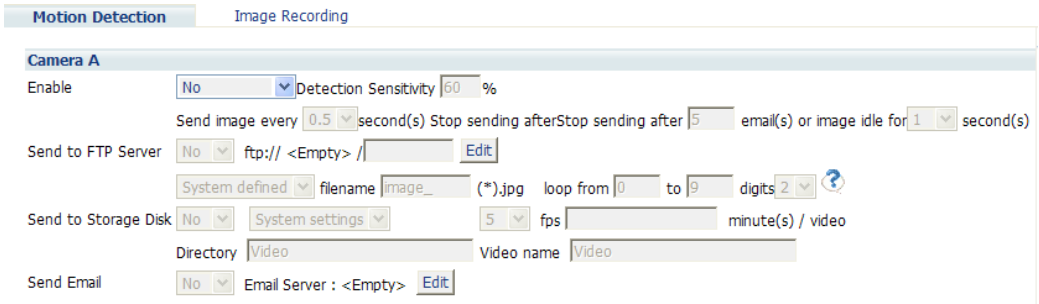


Fig.46 Motion Detection page

Enable

The Administrator has three options for Motion Detection;

a. **Always On,** or;
b. **On Schedule**, the Administrator can set up to 4 different time slots for motion detection, or;
c. **No** to turn Motion Detection function off.

Note:
Check that you have setup valid **Email** / **FTP** accounts first before preceding with the rest of the configuration.

To setup **Email** / **FTP**, refer to Section 3.2.7

Detection Sensitivity

This will determine the level of change before motion capture is triggered. A high percentage means a small change will trigger motion capture.

Send image every … second(s)

Select either; 0.5, 1, 2, 3, 4 or 5 seconds.

Stop sending after … email(s) or image idle for … second(s)

EZ Logger Lite will stop sending emails on the lower of the two conditions. The Administrator can set between 1, 3, 5, 7 and 10 seconds. Emails can be set from 1 to 99999 pieces or 0 for stop sending email only when image idle occurred.

Schedule

When the unit is set to **On Schedule**, the Administrator can configure the four preferred schedule time slots for motion detection. Time must be entered in 24hr format.

Send to FTP Server

Click **Yes** to activate. This option allows the administrator to send and store the motion detected images on a FTP site. This is useful for future reference and recording purpose.

ftp://<empty>/<folder>

This allows the Administrator to determine the folder where the Motion Detected files are stored. Enter a folder name in **<folder>**. Click **Apply** when done.

Note:
The folder name must be valid and has appropriate upload permissions.

You must first enter a valid FTP address in **Email** / **FTP** page. Otherwise the FTP address field will be left **<empty>**.

To setup the FTP server, see Section 3.2.7

System Defined / **User Defined**

The administrator can also determine to either have the system automatically assign the filenames for the pictures saved. Or manually assign the filename.

Filename …

Specify a prefix filename for the motion detected JPG images. The default prefix is **image_**

Loop from … to …

This will determine the number of files in the sequence. Once the last file number is reached, it'll loop and replace the first file in the sequence with the most current image.

Digits …

This will determine the number of digits assignable for the above sequence. The Administrator can choose to assign between **1** to **6** digits.

Click for an example.

Send to Storage Disk

Select **Yes** to save the images to a USB flash drive. This function only works if the USB flash drive is in FAT32 format.

System Settings / **User Settings**

The administrator can also determine to either have the system automatically assign the filenames for the pictures saved. Or manually assign the filename.

FPS … minute(s) / **video**

Specify how many frames per second to record.

Directory / **Video name**

Use these fields to assign the directory and individual Video file names.

Send Email

Select **Yes** to send an email when motion is detected.

Note:
The image size received by Email / FTP depends on the resolution set in **Basic Settings → Camera Settings → Image Size**

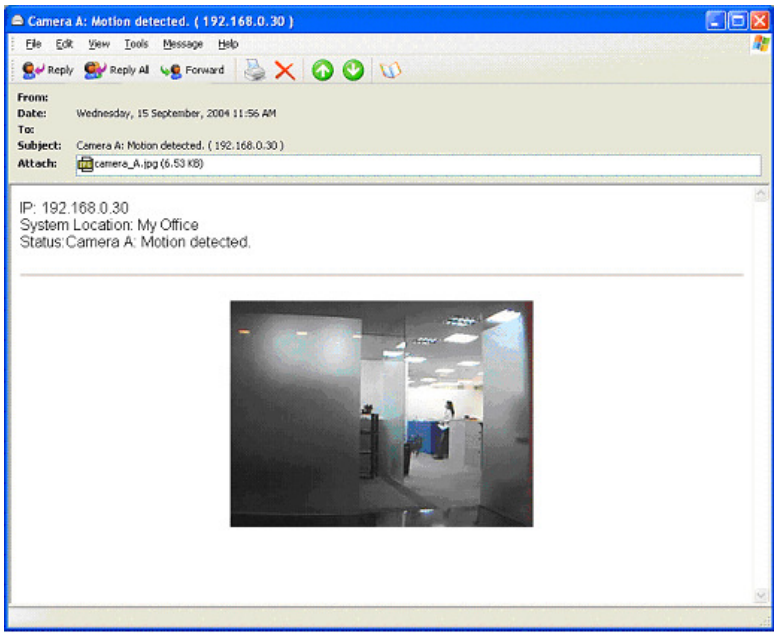

Camera A: Motion detected. (192.168.0.30)
File Edit View Tools Message Help
Reply Reply All Forward
From:
Date: Wednesday, 15 September, 2004 11:56 AM
To:
Subject: Camera A: Motion detected. (192.168.0.30)
Attach: camera_A.jpg (6.53 KB)
IP: 192.168.0.30
System Location: My Office
Status:Camera A: Motion detected.

Fig.47 Motion Detect Email Notification

Email Server: …

The Email server will be shown here. If not, click **Edit** to go to the **Email** / **FTP** configuration page. Click on **Motion Detection** to return here. (refer to section 3.2.4.3 on Email / FTP configuration)

Email Address Book

The available Email addresses are listed here. Refer to Section 3.2.4.3 on how to add an Email address to the **Address Book**.

Recipient

The Administrator can determine who will receive email notification.

To add a recipient to the list, click **<**

To add all the recipients to the list, click **<<**

To remove a recipient from the list, click **>**

To remove all the recipients from the list, click **>>**

Click **Apply** to confirm and save the settings.

4.4 Scheduled Recording

Image recording allows the user to receive a string of JPG images to either their email account or FTP account. The images will be sent over a predetermined interval.

Note:
Due to large data transfer amount of image, make sure you have high speed LAN connection before activating functions to transmit the image through network. For example, GPRS connection is not recommended for image transfer.

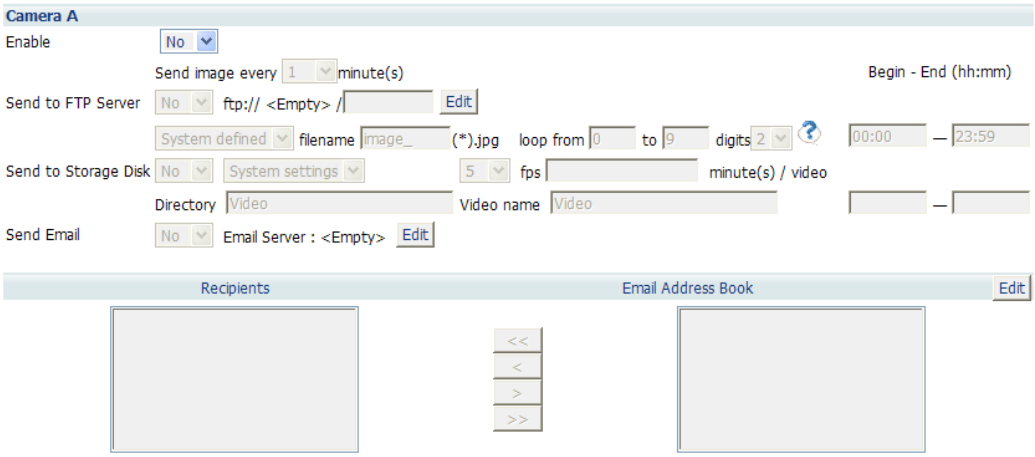


Fig.48 Scheduled Recording Setting

Enable

Click **Yes** to activate this feature.

Begin – End (hh:mm)

The Administrator can determine up to 2 different time slots for Image Recording. The time is in 24hrs format.

Send image every … minute(s)"

The Administrator can determine the interval (between 1 to 99 minutes) at which EZ Logger Lite capture and send an image.

Send to FTP Server & **Send Email**

This is similar to the function available in **Motion Detection** page. Please refer to part (i) above for details.

Note:
The image size received by email / FTP from depends on the resolution set in **Camera Settings → Image Size**

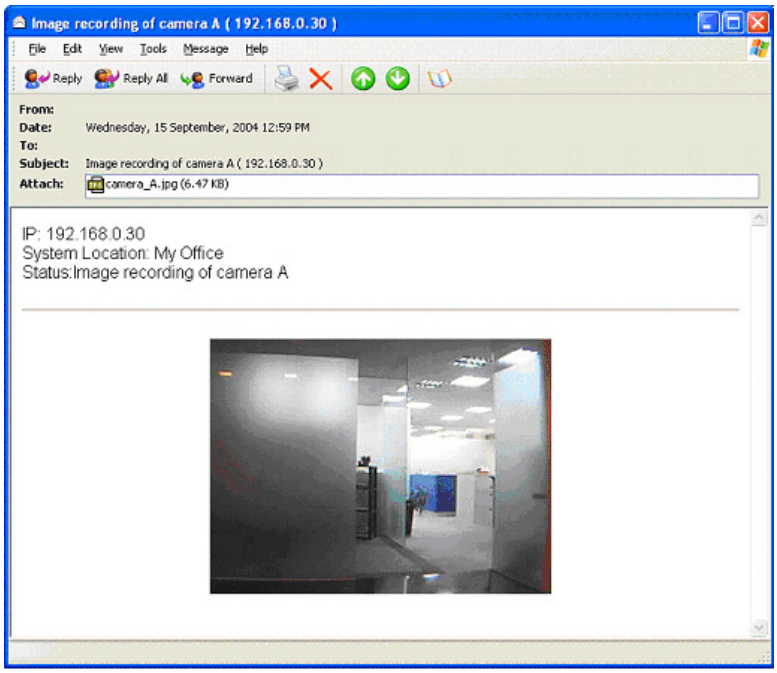


Image recording of camera A (192.168.0.30)
File Edit View Tools Message Help
Reply Reply All Forward
From:
Date: Wednesday, 15 September, 2004 12:59 PM
To:
Subject: Image recording of camera A (192.168.0.30)
Attach: camera_A.jpg (6.47 KB)
IP: 192.168.0.30
System Location: My Office
Status:Image recording of camera A

Fig.49 Email of Image Recorded

4.5 iMage Server

The iMage Server allows the user to view his camera directly from the Internet without having to set-up DDNS or Router's NAT. All the user has to do is to log onto the iMage Server's webpage and register an account.

Once the iMage Account is registered. The user can bring EZ Logger Lite to anywhere with an Internet connection, log onto **www.iCV99.net** and access the video stream.

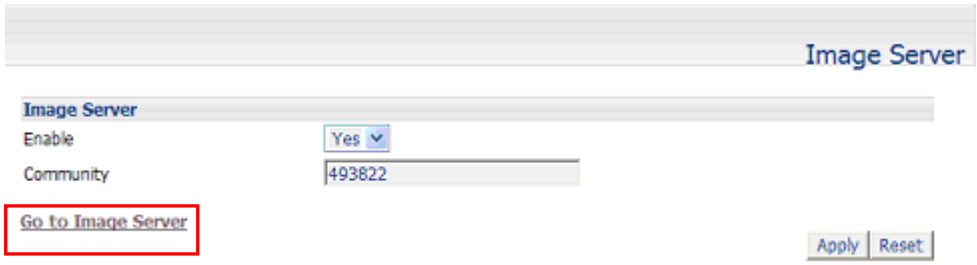


Fig.50 iMage Server settings page

Enable

Choose **Yes** to enable this feature or **No** to disable.

Community

This is a security feature. Set a Community password to add an extra level of Internet security to EZ Logger Lite. Each unit is assigned a 6 digit Community ID by default. Change this to prevent unauthorized access.

Click **Apply** to confirm settings.

To activate the iMage Server account;

1. Click **Goto iMage Server**. Your browser will redirect you to the iMage Server site **www.iCV99.net**.

2. For first time login, click **Register** (see below). Be sure to have the following information at hand;
   i. EZ Logger Lite Serial Number,
   ii. EZ Logger Lite Master Password (both information are located on the label behind EZ Logger Lite)

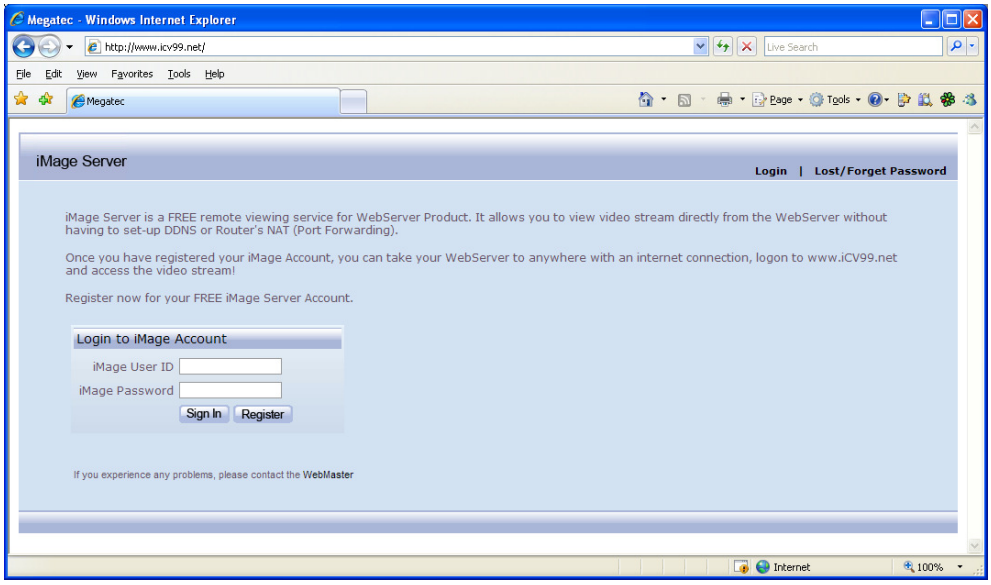

Megatec - Windows Internet Explorer
http://www.icv99.net/
iMage Server
Login | Lost/Forget Password
iMage Server is a FREE remote viewing service for WebServer Product. It allows you to view video stream directly from the WebServer without having to set-up DDNS or Router's NAT (Port Forwarding).
Once you have registered your iMage Account, you can take your WebServer to anywhere with an internet connection, logon to www.iCV99.net and access the video stream!
Register now for your FREE iMage Server Account.
Login to iMage Account
iMage User ID
iMage Password
Sign In
Register
If you experience any problems, please contact the WebMaster

Fig.51 iMage Server login page

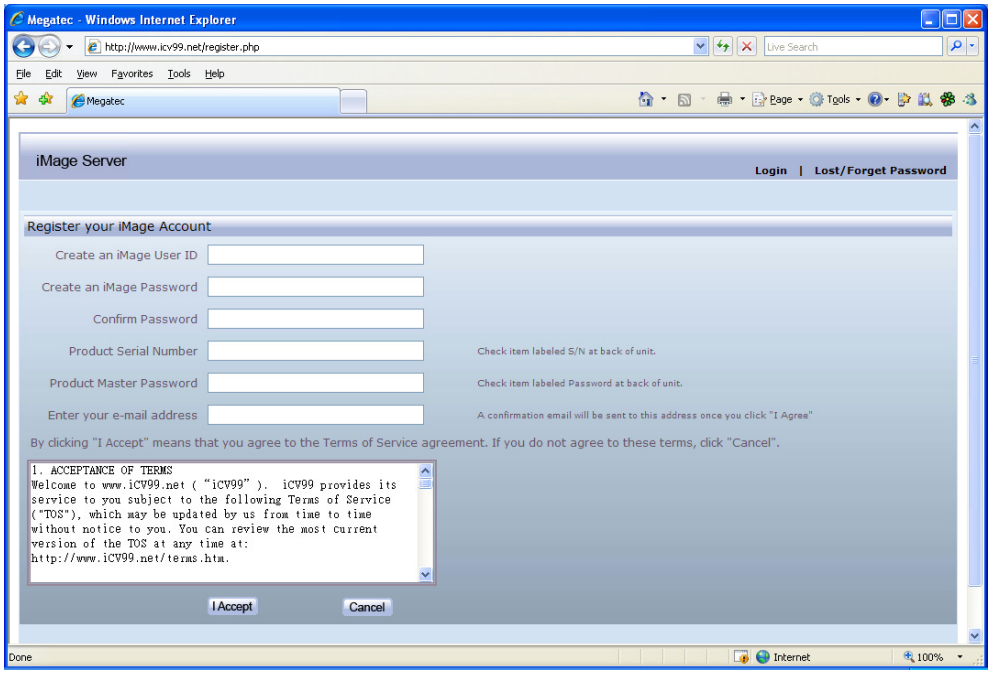

Megatec - Windows Internet Explorer
http://www.icv99.net/register.php
iMage Server
Login | Lost/Forget Password
Register your iMage Account
Create an iMage User ID
Create an iMage Password
Confirm Password
Product Serial Number
Check item labeled S/N at back of unit.
Product Master Password
Check item labeled Password at back of unit.
Enter your e-mail address
A confirmation email will be sent to this address once you click "I Agree"
By clicking "I Accept" means that you agree to the Terms of Service agreement. If you do not agree to these terms, click "Cancel".
1. ACCEPTANCE OF TERMS
Welcome to www.iCV99.net ("iCV99"). iCV99 provides its service to you subject to the following Terms of Service ("TOS"), which may be updated by us from time to time without notice to you. You can review the most current version of the TOS at any time at:
http://www.iCV99.net/terms.htm.
I Accept
Cancel

Fig.52 iMage account Registration page

3. Once registered, a confirmation email will be sent to your email address. You can now sign in to your account using your new iMage User ID.

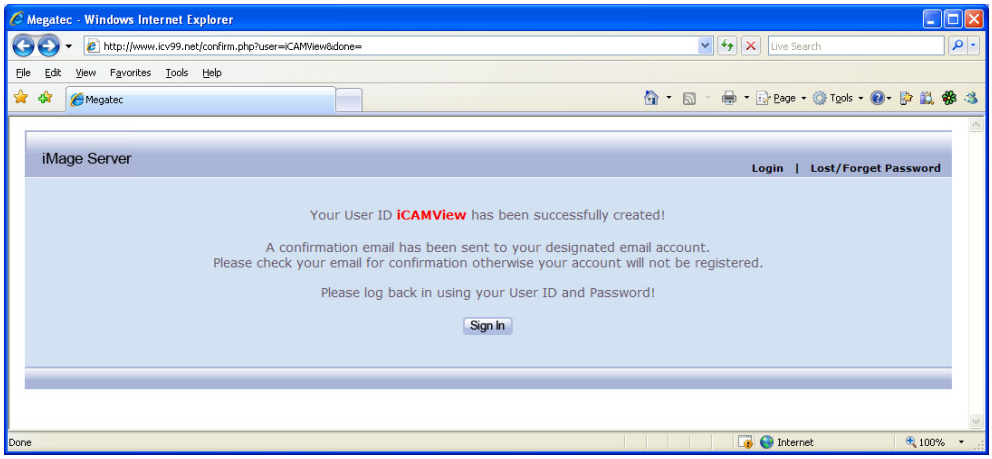
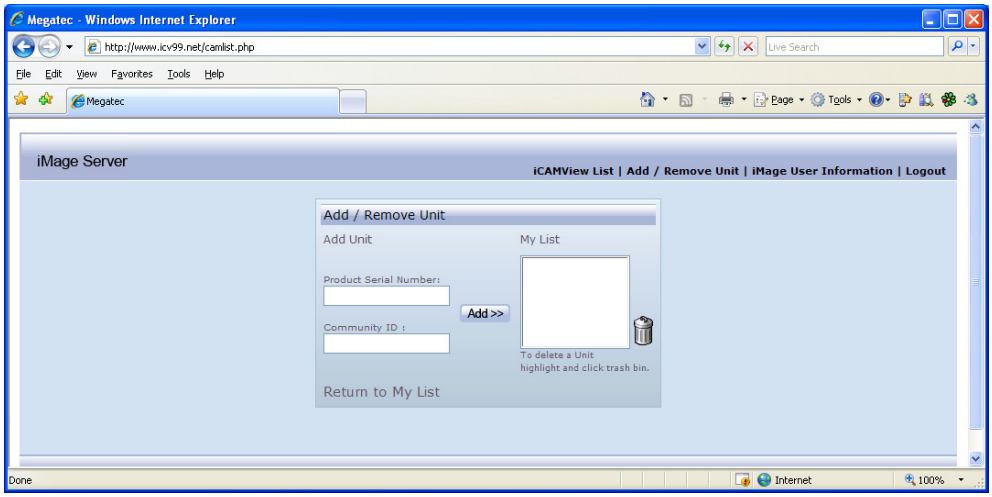
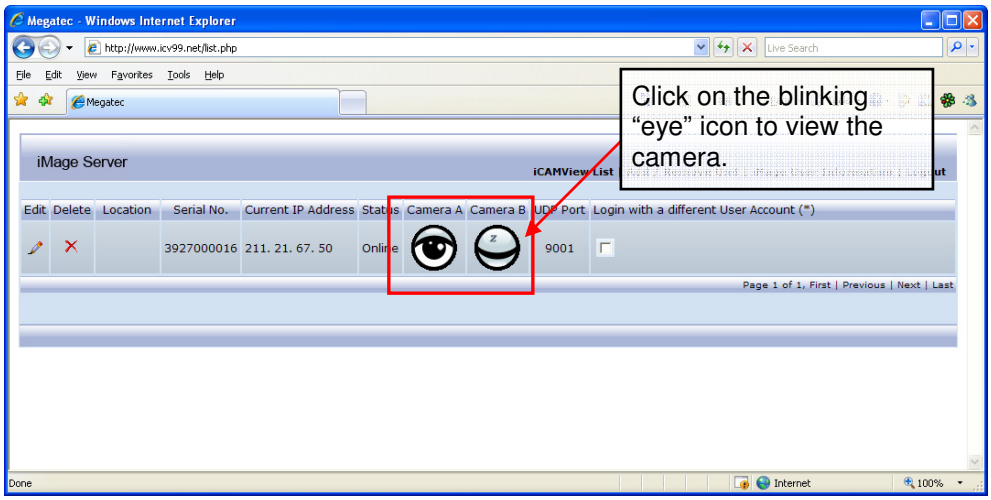

Megatec - Windows Internet Explorer
http://www.icv99.net/confirm.php?user=iCAMView&done=
File Edit View Favorites Tools Help
Megatec
iMage Server
Login | Lost/Forget Password
Your User ID iCAMView has been successfully created!
A confirmation email has been sent to your designated email account.
Please check your email for confirmation otherwise your account will not be registered.
Please log back in using your User ID and Password!
Sign In
Done
Internet
100%

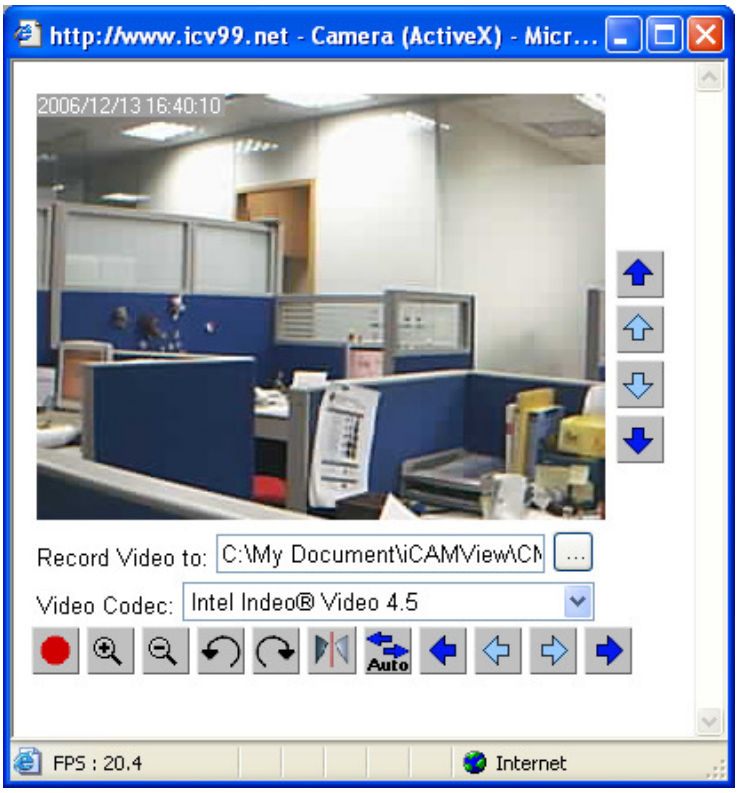
Fig.53 iMage account successfully created.

4. Click **Sign In**, and click **Add** / **Remove Unit**. Enter the Serial Number and Community ID (if one has been set under **Advanced Settings → iMage Server → Community**). Click **Add >>** to add EZ Logger Lite to the List.



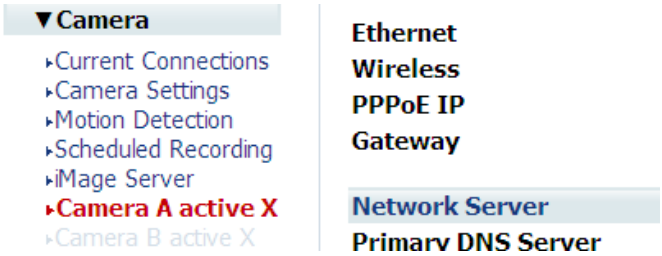
5. Next click **Return to My List**, and and click on the “eye” icon to view the camera.


Megatec - Windows Internet Explorer
http://www.icv99.net/list.php
File Edit View Favorites Tools Help
Megatec
iMage Server
iCAMView List
Edit Delete Location Serial No. Current IP Address Status Camera A Camera B UDP Port Login with a different User Account (*)
3927000016 211. 21. 67. 50 Online 9001
Page 1 of 1, First | Previous | Next | Last
Done
Internet
100%
Click on the blinking "eye" icon to view the camera.


http://www.icv99.net - Camera (ActiveX) - Micr...
2006/12/13 16:40:10
Record Video to: C:\My Document\iCAMView\Cl
Video Codec: Intel Indeo® Video 4.5
Auto
FPS : 20.4
Internet

4.6 To View Video

To view the video, click **Camera A active X** or **Camera B active X** on the main menu. If there is no camera connected to logger, the related text is in grey as below figure (Camera B active X is not available).

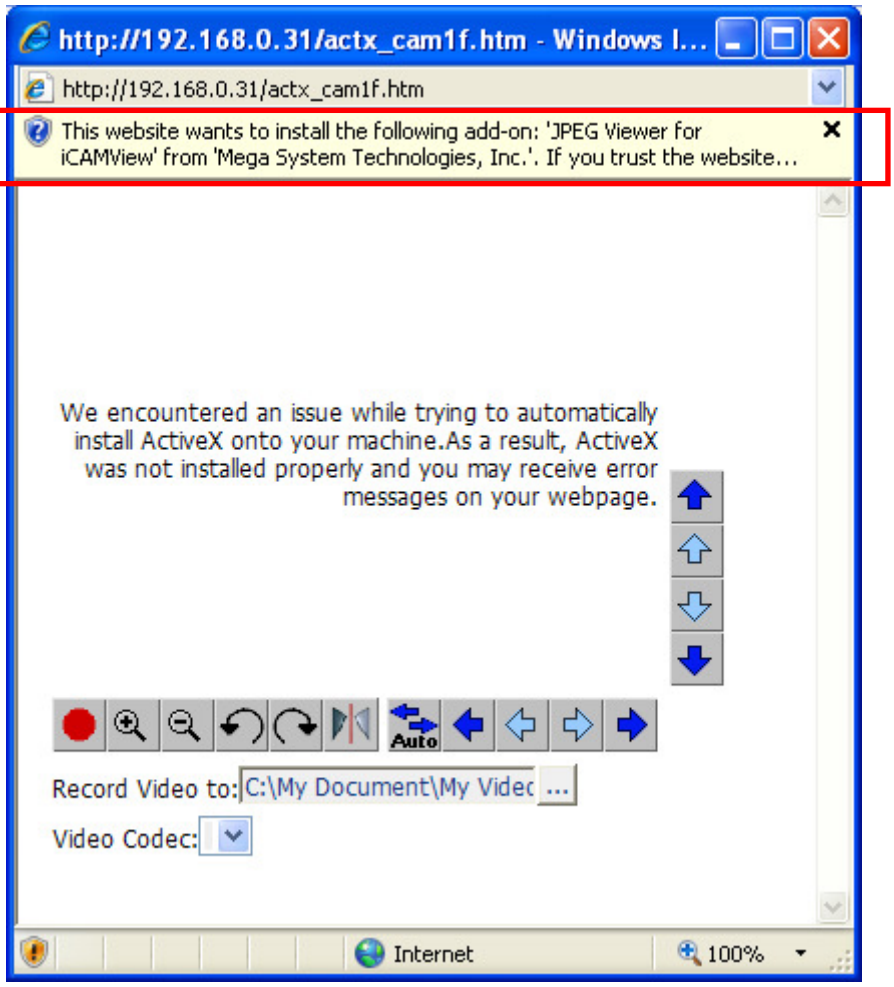


By default the first USB camera connected to EZ Logger Lite will be considered Camera A.

Using ActiveX Controls:

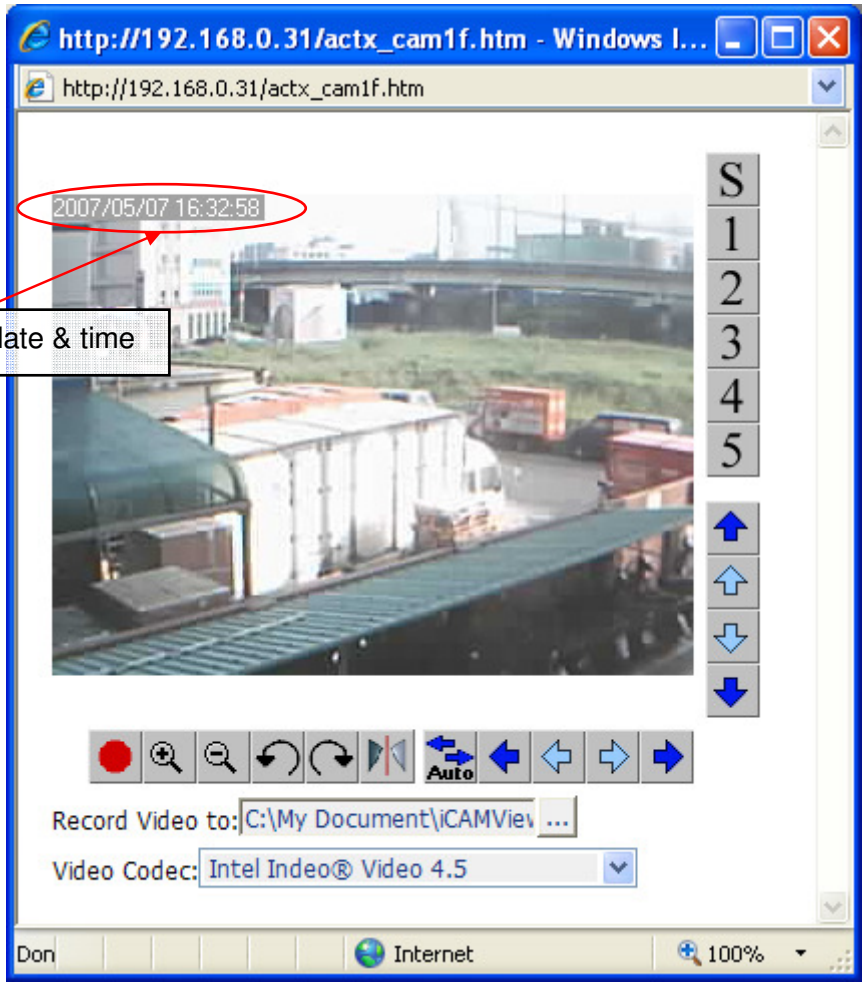
When using ActiveX for the first time, Windows will ask you to download the ActiveX Controls.

Click the top bar to download and install the appropriate ActiveX controls.


http://192.168.0.31/actx_cam1f.htm - Windows I...
http://192.168.0.31/actx_cam1f.htm
This website wants to install the following add-on: 'JPEG Viewer for iCAMView' from 'Mega System Technologies, Inc.'. If you trust the website...
We encountered an issue while trying to automatically install ActiveX onto your machine.As a result, ActiveX was not installed properly and you may receive error messages on your webpage.
Auto
Record Video to: C:\My Document\My Videc ...
Video Codec:
Internet
100%

Internet Explorer - Security Warning
Do you want to install this software?
Name: JPEG Viewer for iCAMView
Publisher: Mega System Technologies, Inc.
More options
Install
Don't Install
While files from the Internet can be useful, this file type can potentially harm your computer. Only install software from publishers you trust. What's the risk?

Once installed, the video will stream.

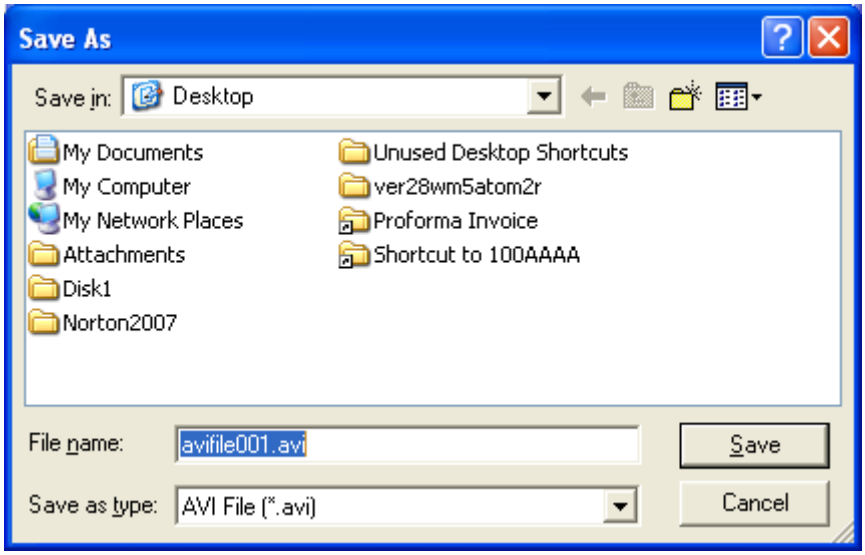


Show current date & time

Note:
Make sure to adjust the USB camera lens for best picture quality.

Click the record button to start video recording.
The default directory is: **C:\My Document\EZ Logger Lite**
The video will be saved in the following format: **CMV20060710123058.avi** [CMV] [yyyy] [mm] [dd] [ttmmss].avi

To change the saved location and filename. Click … and the **Save As** window will pop up. Choose an alternate location or filename.



To change Video Codec, click … Click **Save** to confirm changes.

Note: The availability of Codec depends on whether the individual user has it installed on the PC or not. Download and install Windows Media Player 10 to enable MPEG4 codec.

Digital Zoom In, Digital Zoom Out

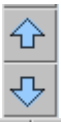
Rotate Left, Rotate Right

Flip the image vertically.

HotSpot icon. Each item corresponds to HotSpot location set in **Basic Setting → Patrol Settings → Hotspot Setting**. Click to jump to the pre-set location.

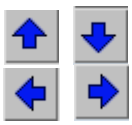
Click **S** to recalibrate and center the camera.

Note:
HotSpot icons will not show if you do not have either; (1) a CM03a Pan Tilt camera, (2) administrator permission or (3) operator permission.



Directional Tool. Click to move the camera *1 degree* in the direction of the arrow.

Note: Directional Tool can also be used with a Static Camera when viewing in resolution less then 320x240.



Directional Tool. Click to move the camera *5 degrees* in the direction of the arrow.

Auto Patrol icon. Click to enable auto patrolling. Auto Patrol is only available when a Pan Tilt camera is connected.

Appendix A: Router Configuration

The following section describes the initial configuration of the router and port forwarding for your router. If your router is not listed here, please refer to the manufacturer's website for assistance with configuring your router to work with EZ Logger Lite.

Port Forwarding for EZ Logger Lite

EZ Logger Lite requires certain ports to be open on your router to allow other computers on the Internet to view it on your internal network. Normally, your router will have the less common ports disabled or blocked by the router's built-in firewall. In order for EZ Logger Lite applications to work properly and not be blocked, the firewall settings need to be configured. In each instance there will be a trigger port and incoming port(s), where traffic on the trigger port tells the Firewall to open the incoming ports. EZ Logger Lite require that TCP Port 80 and UDP 9001 (default settings) be opened to the Internet. TCP Port 80 is used for accessing the camera's homepage and UDP Port 9001 is used for authentication and video streaming.

If your Internet service Provider blocks port 80/9001, you'll need to reconfigure your camera and router to other ports such as 81/9002, 82/9003, etc. To change the port settings on the camera, you'll need to use Utility.

Follow the steps below to configure your router, depending on the router manufacturer and model. If your particular router manufacturer or model is not listed below, please contact your router manufacturer for further assistance in configuring the router.

The following router manufacturers and models are included in this document:

Brand	Model	Description
3Com	3C857-US	OfficeConnect Cable/DSL Gateway
	3CRWE52196	OfficeConnect Wireless Cable/DSL Gateway
Belkin	F5D6230-3	Wireless Cable/DSL Gateway Router
	F5D7230-4– 54g	Wireless DSL/Cable gateway Router
D-Link	DI-604/DI–614+/DI-624	-
	DI-704/704P	-
	DI714	-
	DI-714P+	-
Dell	TrueMobile 2300 Wireless Broadband Router	-
Linksys	BEFSR41	EtherFast Cable/DSL Router
	BEFSX41	Instant Broadband EtherFast Cable/DSL Firewall Router with 4-Port Switch/VPN EndPoint
	BEFW11S4	Wireless Access Point Router with 4-Port Switch – Version 2

Microsoft	MN-100	Wired Base Station
	MN-500	Wireless Base Station
NETGEAR	RP614	Web Safe Router
	MR814	Wireless Router
	MR314	Cable/DSL Wireless Router
	FVS318	ProSafe VPN Firewall
Proxim	ORiNOCO BG-2000 Broadband Gateway	-
Siemens	SpeedStream 2602	2-Port DSL/Cable Router
	SpeedStream 2623	Wireless DSL/Cable Router
	SpeedStream 2604	4-port DSL/Cable Router
	SpeedStream 2624	Wireless DSL/Cable Router
SMC	SMC2404WBR	Barricada Turbo 11/22 Mbps Wireless Cable/DSL Broadband Router
	SMC7004VBR	Barricada Cable/DSL Broadband Router
	SMC7004CWBR	Barricada Wireless Cable/DSL Broadband Router
	SMC7004AWBR	Barricade 4-port 11Mbps Wireless Broadband Router

3Com (http://www.3com.com)

3C857-US – OfficeConnect Cable/DSL Gateway
3CRWE52196 – OfficeConnect Wireless Cable/DSL Gateway

1. Log into your router using your router IP.

2. On the main page, select **Firewalls** on the left side of the page.

3. Select the **Virtual Servers** tab at the top of the page.

4. Click **New** on the right side of the page to open the Virtual Server Settings dialog box.

5. Type in the camera's IP address in the Server IP address text box. (Look at EZ Logger Lite IP address shown on the LCD display for the last 3 digits of the camera's IP address)

6. Under Local Service, select **Custom**.

7. Under Custom Service Name, type in: **EZ Logger Lite**.

8. Under Specify Custom Service Ports, type in: **80, 9001**.

9. Click **Add** to save the settings. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

Belkin (http://www.belkin.com)

F5D6230-3 – Wireless Cable/DSL Gateway Router

1. Log into your router using your router IP.

2. On the main page, select **Virtual Server** on the left side of the page under the Securit section.

3. Enter the following information on the page:

Line #1:

Private IP:	Type in the **camera's IP address**. (Look at EZ Logger Lite IP Address LCD display for the last 3 digits of the camera's IP address)
Private Port:	80
Type:	TCP
Public Port:	80

Line #2

Private IP:	Type in the **camera's IP address**. (Look at EZ Logger Lite IP Address LCD display for the last 3 digits of the camera's IP address)
Private Port:	9001
Type:	UDP
Public Port:	9001

4. Click **Enter** to save the settings. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

F5D7230-4 – 54g Wireless DSL/Cable gateway Router

1. Log into your router using your router IP.

2. On the main page, select **Firewall** on the left side of the page.

3. Under Firewall, select **Virtual Servers**.

4. Enter the following information on the page:

Line #1

Enable:	Checked in
Description:	EZ Logger Lite - Webpage
Internet Port:	80 to 80
Type:	TCP
Private IP address:	Type in the **camera's IP address**. (Look on the EZ Logger Lite Address LCD display for the last 3 digits of the camera's IP address)

Private Port	80 to 80

Line #2

Enable:	Checked in
Description:	EZ Logger Lite – Camera
Internet Port:	9001 to 9001
Type:	UDP
Private IP address:	Type in the **camera's IP address**. (Look at EZ Logger Lite IP Address shown on LCD display for the last 3 digits of the camera's IP address)
Private Port	9001 to 9001

5. Click **Apply Changes** to save the settings. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

D-Link (http://www.dlink.com)

DI-604/DI – 614+/DI-624

1. Log into your router using your router IP.

2. On the main page, click on **Advanced** at the top of the page.

3. On the left side of the page, click on **Virtual Server**. Note: Make sure DMZ host is disabled. If DMZ is enabled, it will disable all Virtual Server entries.

4. Enter the following information on the page:

Enable/Disable:	Enabled
Name:	EZ Logger Lite - Webpage
Private IP:	Type in the **camera's IP address**, for example: 192.168.0.5
Protocol Type:	TCP
Private Port:	80
Public Port:	80
Schedule:	Always

5. Click **Apply** to save the settings.

6. Enter the following information on the page:

Enable/Disable:	Enabled
Name:	EZ Logger Lite - Webpage
Private IP:	Type in the **camera's IP address**, for example: 192.168.0.5
Protocol Type:	UDP
Private Port:	9001
Public Port:	9001
Schedule:	Always

7. Click **Apply** to save the settings. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

DI-704/704P

1. Log into your router using your router IP.

2. On the main page, click on **Advanced** at the top of the page.

3. On the **Virtual Server** page, enter the following information;

For ID#1:

Service Port:	80
Service IP:	Type in the **camera's IP address**, for example: 192.168.0.5

Enabled/Disabled: Enabled

For ID#2
Service Port: 9001
Service IP: Type in the **camera's IP address**, for example: 192.168.0.5
Enabled/Disabled: Enabled

4. Save your settings. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

DI714

1. Log into your router using your router IP.

2. On the main page, click on **Advanced** at the top of the page.

3. Click on **Virtual Server Settings** on the left side of the page.

4. Enter the camera's IP address into the Internal IP field. Under Service, select **All** and then click **Submit** to save your settings. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

DI-714P+

1. Log into your router using your router IP.

2. On the main page, click on **Advanced** at the top of the page.

3. On the left side of the page, click **Virtual Server**.

4. Enter the following information on the page:
For ID#1:
Service Port: 80
Service IP: Type in the **camera's IP address**, for example: 192.168.0.5
Enabled/Disabled: Enabled

For ID#2
Service Port: 9001
Service IP: Type in the **camera's IP address**, for example: 192.168.0.5
Enabled/Disabled: Enabled

5. Click **Apply** to save your settings. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

Dell (http://www.dell.com)

TrueMobile 2300 Wireless Broadband Router

1. Log into your router using your router IP.

2. On the main page, click on **Advanced Settings** at the top of the page.

3. Go to the Port Forwarding section and select Custom Port Forwarding Settings.

4. Check the **Enable** box.

5. Enter the desired name or description in the **Service Name** field such as **EZ Logger Lite Web**.

6. In the **Incoming Ports** field, specify port **80** in both boxes.

7. In the **Destination IP Address** field, enter EZ Logger Lite IP address.

8. In the **Destination MAC Address** field, enter EZ Logger Lite MAC address. You can find the camera's MAC address by either looking at the MAC address sticker on the bottom of the camera or by utilizing setup utility to display the MAC address.

Linksys (http://www.linksys.com)

BEFSR41 – EtherFast Cable/DSL Router
BEFSX41 – Instant Broadband EtherFast Cable/DSL Firewall Router with 4-Port Switch/VPN EndPoint
BEFW11S4 – Wireless Access Point Router with 4-Port Switch – Version 2

1. Log into your router using your router IP.

2. On the router's main page, click on **Advanced** at the top of the page.

3. On the next page, click on **Forwarding**.

4. Enter the following information on the page:

Line #1:

Customized Applications:	EZ Logger Lite – Webpage
Ext. Port:	80 to 80
Protocol:	TCP
IP Address:	Type in the **camera's IP address**, for example: 192.168.0.5
Enable:	Checked in

Line #2:

Customized Applications:	EZ Logger Lite – Camera
Ext. Port:	9001 to 9001
Protocol:	UDP
IP Address:	Type in the **camera's IP address**, for example: 192.168.0.5
Enable:	Checked in

5. Click on **Apply** to save the settings. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

Microsoft (http://www.microsoft.com/hardware/broadbandnetworking)

MN-100 – Wired Base Station
MN-500 – Wireless Base Station

1. Log into your router using your router IP.

2. Open the Bass Station Management Tool, and then click **Security**.

3. On the Security menu, click **Port Forwarding**, and then click **Set up persistent port forwarding**.

4. In the Enable checkbox, check in the checkbox.

5. In the Description box, type a description of the server field such as: **EZ Logger Lite Web**.

6. In the Inbound port boxes, type in: **80 – 80**. (i.e. from Port 80 to Port 80)

7. In the Type box, select the protocol as **TCP**.

8. In the Private IP address box, type in the **IP Address** of EZ Logger Lite network camera. For example, type in: 192.168.0.5.

9. In the Private port boxes, these values are automatically filled in from Step 6 and should already show **80 – 80**.

10. On the next empty line, repeat steps 4-9, except this time the Description should be **EZ Logger Lite Cam** and the Inbound/Private port boxes should be **9001 – 9001** (UDP). The protocol and private IP address should be the same.

11. Click **Apply** to save the changes you have made. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

NETGEAR (http://www.netgear.com)

RP614 – Web Safe Router
MR814 – Wireless Router

1. Log into your router using your router IP.

2. Click **Advanced -> Port Forwarding** on the left side of the page.

3. Click Add Customer Service.

4. Enter the following information on the page:

Service Name:	EZ Logger Lite – Web
Starting Port:	80
Ending Port:	80
Server IP Address:	Type in the **camera's IP address**, for example: 192.168.0.5

5. Click **Apply** to save the settings.

6. Enter the following information on the page:

Service Name:	EZ Logger Lite – Cam
Starting Port:	9001
Ending Port:	9001
Server IP Address:	Type in the **camera's IP address**, for example: 192.168.0.5

7. Click **Apply** to save the settings. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

MR314 – Cable/DSL Wireless Router

1. Log into your router using your router IP.

2. Click **Advanced** on the left side of the page.

3. Click **Ports**.

4. Enter the following information on the page:

Line #1:	
Starting Port:	80
Ending Port:	80
Server IP Address:	Type in the **camera's IP address**, for example: 192.168.0.5

Line #2:

Starting Port:	9001
Ending Port:	9001
Server IP Address:	Type in the **camera's IP address**, for example: 192.168.0.5

5. Click **Apply** to save the settings. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

FVS318 – ProSafe VPN Firewall

1. Log into your router using your router IP.

2. On the main page, click on **Add Service** on the left side of the screen.

3. Click Add Customer Service.

4. In the **Name** field enter a name for the camera, for example: **EZ Logger Lite Web**:

Type:	TCP
Start Port:	81
Finish Port:	81

5. Click **Apply** to save the settings.

6. There is a bug in the NETGEAR FVS318 1.4 firmware that does not record any entry that uses port 80. If you intend to use port 80, you will initially need to enter 81 for the Start and Finish port, and then edit the entry to port back to 80. Click on **Add Service** on the left side of the screen.

7. In the **Service Table** window select EZ Logger Lite Web and click **Edit Service**.

8. Change the **Start** and **Finish** port to **80**. Click **Apply**.

9. On the main page, click on **Add Service** on the left side of the screen and then click **Add Custom Service**. In the **Name** field enter a name for the camera, for example: **EZ Logger Lite Cam**.

Type:	UDP
Start Port:	9001
Finish Port:	9001

10. Click **Apply** to save the settings.

11. On the main page, click on **Ports** at the side of the screen.
    A. Click **Add**.
    B. For Service Name select: **EZ Logger Lite Web**
    C. Action: **ALLOW always**

D. Local Server Address: Enter the IP address of the camera
E. WAN Users Address: **Any**
F. Click **Apply**.

12. Click Add again.
A. For Service name select: **EZ Logger Lite Cam**
B. Action: **ALLOW always**
C. Local Server Address: Enter the IP address of the camera
D. WAN Users Address: **Any**
E. Click **Apply**.

13. Exit the router setup program. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

Proxim (http://www.proxim.com)

ORiNOCO BG-2000 Broadband Gateway

1. Log into your router using your router IP.

2. On the router's main page, click on **Setup** at the top of the page.

3. On the left side of the page, click on **Advanced settings -> Port Forwarding**.

4. Check in the checkbox for **Enable Port Forwarding**.

5. Click **New** on the right side of the page.

6. Enter the following information on the page:

Global Port:	80
Local Address:	Type in the **camera's IP address**, for example: 192.168.0.5
Local Port:	80
Type:	TCP

7. Click **Save** to save the settings.

8. Click **New** on the right side of the page.

9. Enter the following information on the page.

Global Port:	9001
Local Address:	Type in the **camera's IP address**, for example: 192.168.0.5
Local Port:	9001
Type:	UDP

10. Click **Save** to save the settings.

11. Click **Restart** on the left side of the page to restart your router. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

Siemens (http://www.speedstream.com)

SpeedStream 2602 – 2-Port DSL/Cable Router
SpeedStream 2623 – Wireless DSL/Cable Router
SpeedStream 2624 – Wireless DSL/Cable Router

1. Log into your router using your router IP.

2. After you are logged in, click on **Advanced Setup -> Virtual Servers**.

3. Enter the following information on the page:

Line #1:

Private IP:	Type in the **camera's IP address**, for example: 192.168.0.5 (Look at EZ Logger Lite's IP Address LCD display for the last 3 digits of the camera's IP address)
Private Port:	80
Type:	TCP
Public Port:	80

Line #2

Private IP:	Type in the **camera's IP address**, for example: 192.168.0.5 (Look at EZ Logger Lite's IP Address LCD display for the last 3 digits of the camera's IP address)
Private Port:	9001
Type:	UDP
Public Port:	9001

4. Click **Enter** to save the settings. EZ Logger Lite should now be configured to work with your router and be accessible from the internet.

SpeedStream 2604 – 4-port DSL/Cable Router

1. Log into your router using your router IP.

2. After you are logged in, click on **Advanced Setup -> Virtual Servers**.

3. Under the Properties section, there are a few entries you'll need to add. Check in the checkbox for **Enable**.

4. Under the first box, next to the Enable checkbox, type in: **EZ Logger Lite Web**.

5. Under PC (Server), select your camera or the camera's IP address from the list. If the camera is not listed, select the link titled "My PC is not listed."

6. Leave Protocol as **TCP**.

7. Under Internal Port No type in: **80**

8. Under External Port No type in: **80**

9. Click on **Add** to save these settings.

10. In the first box, next to the Enable checkbox, type in: **EZ Logger Lite Cam**.

11. In PC (Server), select your camera or the camera's IP address from the list. If the camera is not listed, select the link titled "My PC is not listed."

12. Leave Protocol as **TCP**.

13. Under Internal Port No type in: **9001**

14. Under External Port No type in: **9001**

15. Click on **Add** to save these settings. EZ Logger Lite should now be configured to work with your router and be accessible from the Internet.

SMC (http://www.smc.com)

SMC2404WBR – Barricada Turbo 11/22 Mbps Wireless Cable/DSL Broadband Router
SMC7004VBR – Barricada Cable/DSL Broadband Router
SMC7004CWBR – Barricada Wireless Cable/DSL Broadband Router

1. Log into your router using your router IP.

2. After you are logged in, click **NAT** on the left side of the page.

3. Click on **Virtual Server** on the left side of the page.

4. Enter the following information on the page:

Line #1:

Private IP:	Type in the **camera's IP address**, for example: 192.168.0.5 (Look at EZ Logger Lite's IP Address LCD display for the last 3 digits of the camera's IP address)
Private Port:	80
Type:	TCP
Public Port:	80

Line #2

Private IP:	Type in the **camera's IP address**, for example: 192.168.0.5 (Look at EZ Logger Lite's IP Address LCD display for the last 3 digits of the camera's IP address)
Private Port:	9001
Type:	UDP
Public Port:	9001

5. Click **Apply** to save the settings. EZ Logger Lite should now be configured to work with your router and be accessible from the Internet.

SMC7004AWBR – Barricade 4-port 11Mbps Wireless Broadband Router

1. Log into your router using your router IP.

2. Click on **Virtual Server** on the left side of the page.

3. Enter the following information on the page:

For ID #1:

Service Port:	80
Private IP:	Type in the **camera's IP address**, for example: 192.168.0.5 (Look at EZ Logger Lite's IP Address LCD display for the last 3 digits of the camera's IP address)
Enable:	Checked in

For ID #2:	
Service Port:	9001
Private IP:	Type in the **camera's IP address**, for example: 192.168.0.5 (Look at EZ Logger Lite's IP Address LCD display for the last 3 digits of the camera's IP address)
Enable:	Checked in

4. Click **Save** to save the settings. EZ Logger Lite should now be configured to work with your router and be accessible from the Internet.

Appendix B: Methods to Update EZ Logger Lite Firmware

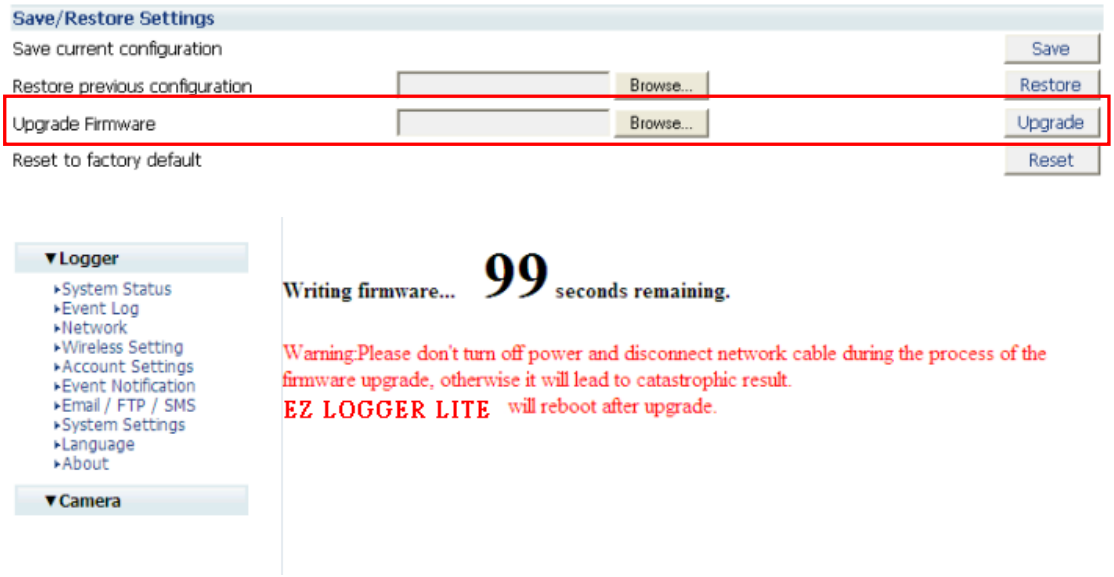
You can update EZ Logger Lite firmware by following methods.

Through EZ Logger Lite Web Page

(1) Enter EZ Logger Lite Web Page

(2) Go to **About**, click **update software** and you will be automatically linked for update.

(3) Wait **99 Seconds** to upgrade Firmware.



Appendix C: IP Address, Subnet and Gateway

This section discusses Communities, Gateways, IP Addresses and Subnet masking

Communities
A community is a string of printable ASCII characters that identifies a user group with the same access privileges. For example, a common community name is “public”. For security purposes, the SNMP agent validates requests before responding. The agent can be configured so that only trap managers that are members of a community can send requests and receive responses from a particular community. This prevents unauthorized managers from viewing or changing the configuration of a device.

Gateways
Gateway, also referred to as a router, is any computer with two or more network adapters connecting to different physical networks. Gateways allow for transmission of IP packets among networks on an Internet.

IP Addresses
Every device on an Internet must be assigned a unique IP (Internet Protocol) address. An IP address is a 32-bit value comprised of a network ID and a host ID. The network ID identifies the logical network to which a particular device belongs. The host ID identifies the particular device within the logical network. IP addresses distinguish devices on an Internet from one another so that IP packets are properly transmitted.

IP addresses appear in dotted decimal (rather than in binary) notation. Dotted decimal notation divides the 32-bit value into four 8-bit groups, or octets, and separates each octet with a period. For example, 199.217.132.1 is an IP address in dotted decimal notation.

To accommodate networks of different sizes, the IP address has three divisions – Classes A for large, B for medium and C for small. The difference among the network classes is the number of octets reserved for the network ID and the number of octets reserved for the host ID.

Class	Value of First Octet	Network ID	Host ID	Number of Hosts
A	1-126	First octet	Last three octets	16,387,064
B	128-191	First two octets	Last two octets	64,516
C	192-223	First tree octets	Last octet	254

Any value between 0 and 255 is valid as a host ID octet except for those values the InterNIC reserves for other purposes

Value	Purpose
0, 255	Subnet masking
127	Loopback testing and interprocess communication on local devices
224-254	IGMP multicast and other special protocols.

Subnetting and Subnet Masks
Subnetting divides a network address into sub-network addresses to accommodate more than one physical network on a logical network.

For example:
A Class B company has 100 LANs (Local Area Networks) with 100 to 200 nodes on each LAN. To classify the nodes by its LANs on one main network, this company segments the network address into 100 sub-network addresses. If the Class B network address is 150.1.x.x, the address can be segmented further from 150.1.1.x through 150.1.100.x

A subnet mask is a 32-bit value that distinguishes the network ID from the host ID for different sub-networks on the same logical network. Like IP addresses, subnet masks consist of four octets in dotted decimal notation. You can use subnet masks to route and filter the transmission of IP packets among your sub-networks. The value “255” is assigned to octets that belong to the network ID, and the value “0” is assigned to octets that belong to the host ID.

For the example above, if you want all the devices on the sub-networks to receive each other’s IP packets, set the subnet mask to 255.255.0.0. If you want the devices on a single sub-network only to receive IP packets from other devices on its own sub-network, set the subnet mask to 255.255.255.0 for the devices on the sub-network.

Subnet Mask	Routing and Filtering
0.0.0.0	IP packets are transmitted to all devices.
255.0.0.0	IP packets are only transmitted to devices that are IP that’s first octet matches the sender’s IP address’s first octet.
255.255.0.0	IP packets are only transmitted to devices that are IP that’s first two octets match the sender’s IP address’s first two octets.
255.255.255.0	IP packets are only transmitted to devices that are IP that’s first three octets match the sender’s IP address’s first three octets.

MAC address
In computer networking a **Media Access Control address** (**MAC address**) or **Ethernet Hardware Address** (**EHA**) or **hardware address** or **adapter address** is a quasi-unique identifier attached to most network adapters (NICs). It is a number that acts like a name for a particular network adapter

Appendix D: Supporting Devices

Temperature and Irradiation sensor

Type: SOZ-03
Manufacturer: NES Measuring Systems
Web: http://www.nes-datalogger.de

Technical data:
Measurement range: 0...1200W/m²
Output Range: 0...100mV for 0...1000W/m²
Error: ± 5%
Measurement Drift: <1% / Year
Temperature Sensor used: PT1000, Platinum Resistor

Wireless USB Adapter

List of Compatible Wireless USB using Ralink RT2500 Chipset

MANUFACTURER	MODEL NO.
Buffalo	WLI-U2-KG54-AI
D-Link	DWL-G122 b1
Eminent	EW-731
Ultiva	Wireless 11g USB Adaptor

USB cameras

List of Compatible Wireless USB using Atheros ZD1211 Chipset.

MANUFACTURER	MODEL NO.
3COM	3CRUSB10075
A-Link	WL54USB
Abocom	WUG2650 WUG2670
AOpen	802.11g WL54
ACER	WLAN-G-US1
Airlink	101 AWLL3026 (zd1211 & zd1211b)
Airlink + Airlink Plus	AWLL3025
Allnet	ALLSPOT Hotspot-Finder a/b/g
AmbiCom	WL54-USB
ASUS	WL-159g A9T Laptop Integrated
Aztech	Wireless G WL630USB
Belkin	F5D7050 v.4000
Bluecomm	WL-2203S
Cable & Wireless	CW/108/USBA
Canyon	CN-WF518
CC&C	WL-2203 WL-2203B

	WL-2203S
CompUSA	Wireless G USB Adaptor
Comtrend	CT-WN4320Z
DigiCom	USB Wave 54
DrayTek	Vigor 550
EdiMax	EW-7317UG EW-7317UHg
Encore	ENUWI-G-ZDPR
Fiberline	WL-400 WL-410U WL-430U (zd1211 & zd1211b*)
GigaFast	WF748-CUI
Hawking	HWU54G HWU8DD HWL2
iNexQ	UR055g
Iogear	GWU523
JAHT	WN-4054U
Jensen Air	Link 6554 USB stick
LevelOne	WNC-0301 USB v1/v2
Linksys	WUSBF54G (zd1211 & zd1211b*)
Longshine	LCS-8131G LCS-8131G2 LCS-8131G3
OvisLink	WL5480USB-50 WL5480USB-80
Peabird	Wlan USB
Pheenet High Power	802.11g WLU-803G
Phoebe	802.11g Wireless USB 2.0 Adaptor
Planet	WL-U356
Planex	GW-US54GZL GW-US54GZ-WO GW-US54Mini
Repotec	RP-WU0402
Safecom	SWLU-5400 SWMULZ-5400
Sagem	XG760A XG76NA
Senao	NUB-8301
Shuttle	XPC PN18
Siemens	Gigaset USB Stick 54
Sitecom	WL-113
Skintek	SK-54MBIT-Jack
SMC EZ Connect	SMCWUSB-G
StarTech	USB555WG
Surecom	EP-9001-g-A2
Sweex	Wireless USB 54 Mbps
T-Mobile	Zydas USB
Telegent	TG54USB
Trendnet	TEW-424UB TEW-424UB A TEW-424UB B1

	TEW-424UB C1
Trust	NW-3100
TwinMOS	G240
X-Micro	XWL-11GUZX
Xnet	UWG640E
Xterasys	XN-3133G XN-3134G
Yakumo	QuickWLan USB
Zonet	ZEW2501 (zd1211 & zd1211b*)
ZyXEL	ZyAIR G-220 ZyAIR G-220 v2 (zd1211 & zd1211b*) ZyAIR G-220F ZyAIR AG-225H
Z-com	XG-760A

GPRS Modem

MANUFACTURER	**MODEL NO.**
SIEMENS	MC-55

Appendix E: System configurations

In the following sections, there are many most common configurations for different purposes and applications. The configuration is very flexible according to system design. For detail information regarding to data logger, contact with your local dealer; for information of network, you may ask your computer system designer and/or provider.

LAN connection with single Logger

It is the simplest configuration. The data logger is connected to a PV system and a computer installed with monitoring software. In this case, data logger is connected to computer directly by "**crossover**" Ethernet cable.
Before connecting to a computer, data logger must be set with IP address manually by other computer and method.
User can also use a router with DHCP function in between computer and data logger. In this case, the router can assign an IP to the data logger. To communicate with data logger, key in the IP address shown on LCD as stated in section 3.2.3 .

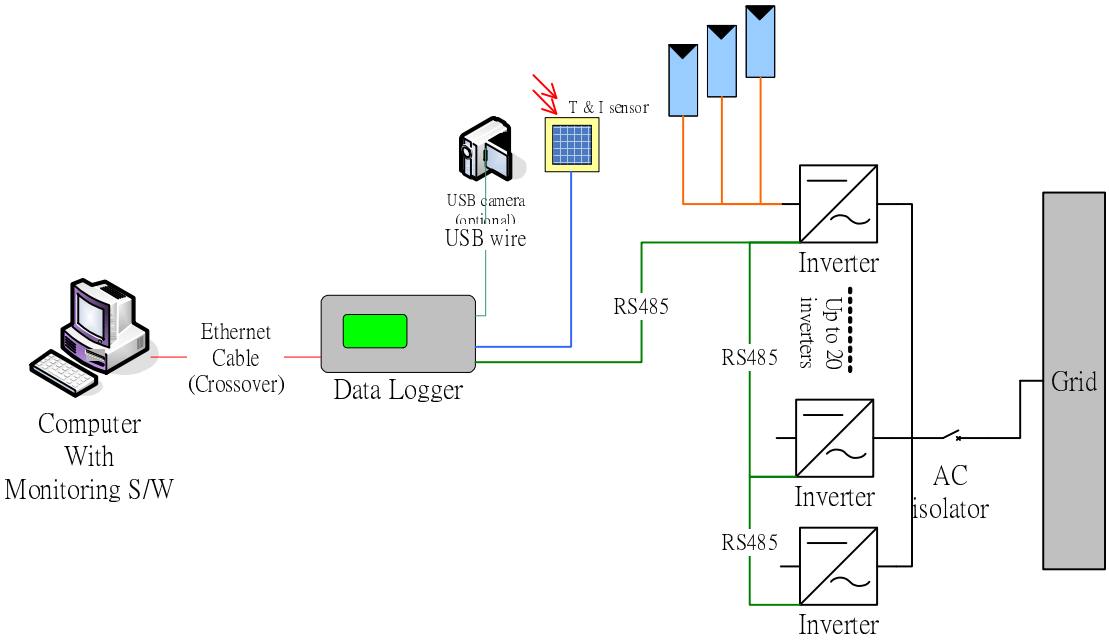


Fig.54 System configuration with single logger in LAN

LAN connection with multiple loggers

In this configuration, there are more than data loggers in the system. If a HUB with DHCP function is used, user has to setup the IP address of data logger as previous section. However, we recommend using a router with DHCP function instead of hub. Computer installed with monitoring program such as PV Monitor can monitor multiple data loggers in the same time.

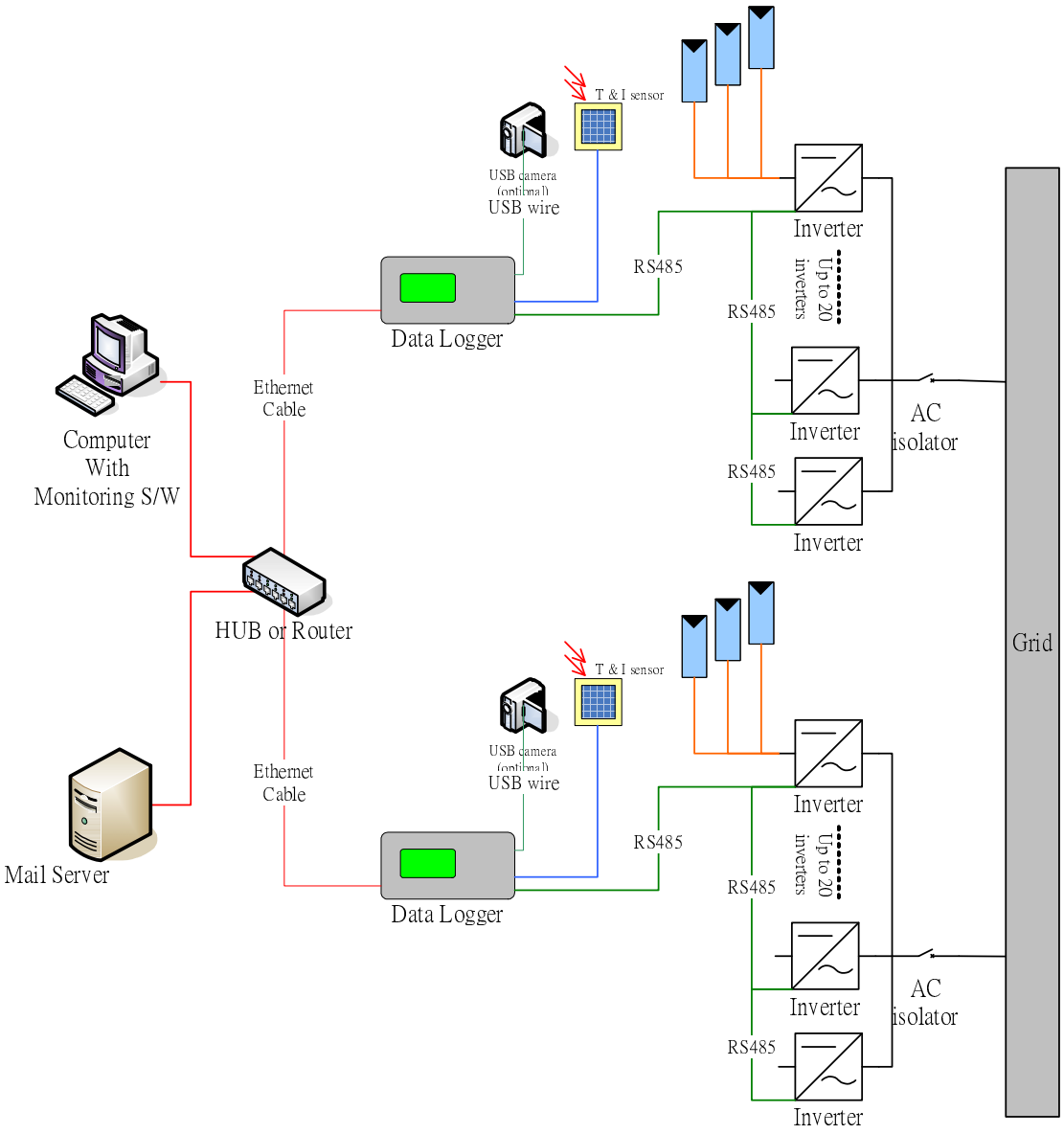


Fig.55 System configuration with multiple data loggers in LAN

LAN connection with wireless AP

The Ethernet cable can also be replaced to wireless connection. This can reduce the cost efforts to connect a system. In such configuration, you need a wireless AP connected to the hub or router; also a Wireless USB Adapter is used for data logger. For detail setup, refer to section 3.2.4 .

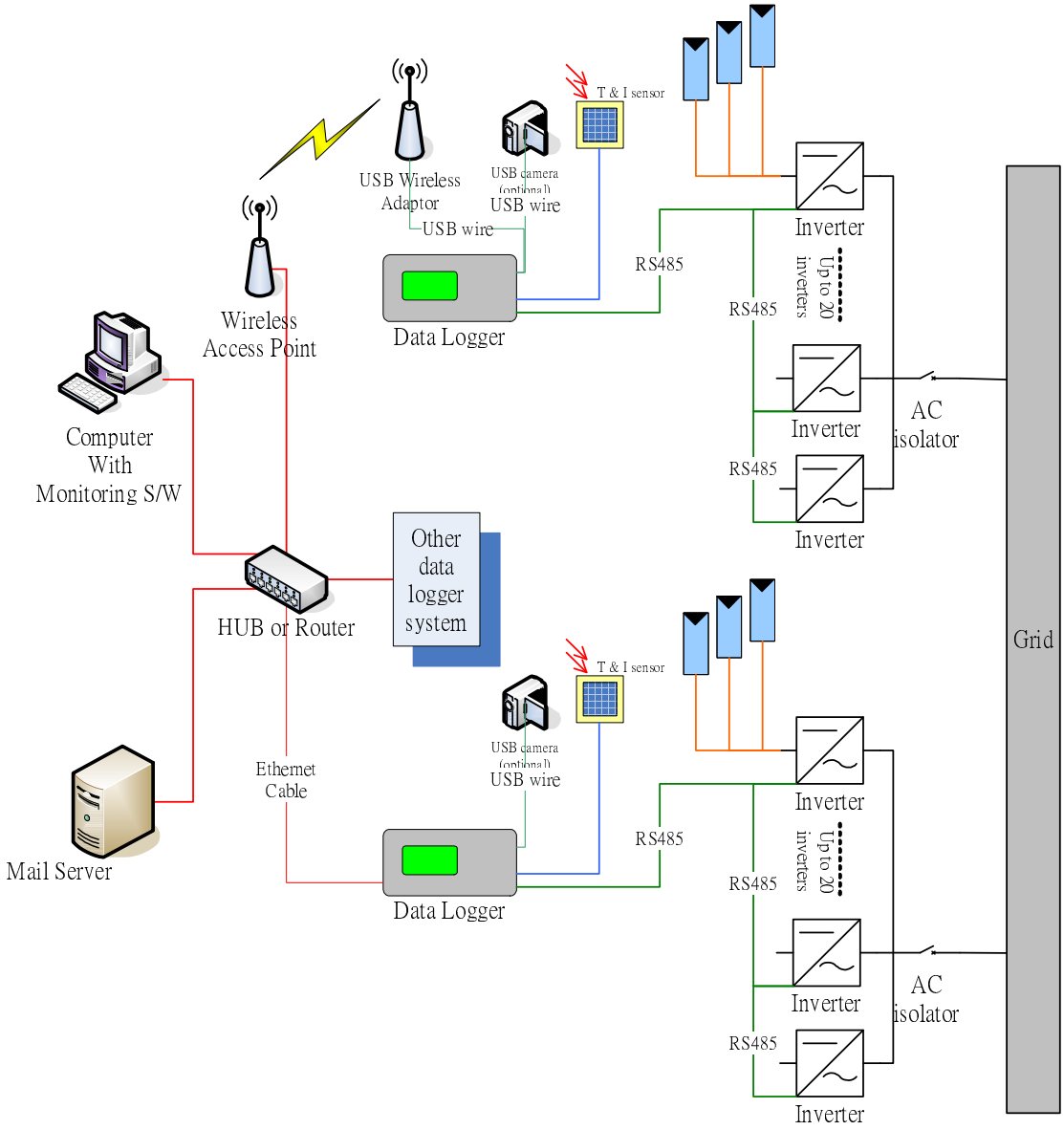


Fig.56 Wireless configuration with multiple data loggers in LAN

Internet Connection with multiple fixed IP

To connect to Internet, you need Internet IP from your ISP (Internet Service Provider). To be able accessed by computer in the Internet, each data logger need a public IP address individually. If the IP number given from ISP is less than number of data loggers, e.g. 1 public IP address for 3 data loggers, only 1 data logger can be accessed through Internet.

To reduce the setting efforts, we recommend applying fixed (static) IP from your ISP. If the IP is floating, you need to setup DDNS, please refer to section Internet Connection with multiple floating IP next.

If you use a router with DHCP function, the IP address assigned by router is different form IP from your ISP, in such case; user must set the NAT (Network Address Transfer) function to map your local IP address and Internet IP. In this situation, to access data logger, you are not able to key in the IP address shown on LCD, instead, you must key in the public IP address given by your ISP provider. An example below, to access data logger, you must key in IP that 201.150.49.43, not the IP shown on LCD.

Fig.57 Public IP example in a router

For setting NAT, please refer to user manual of router.

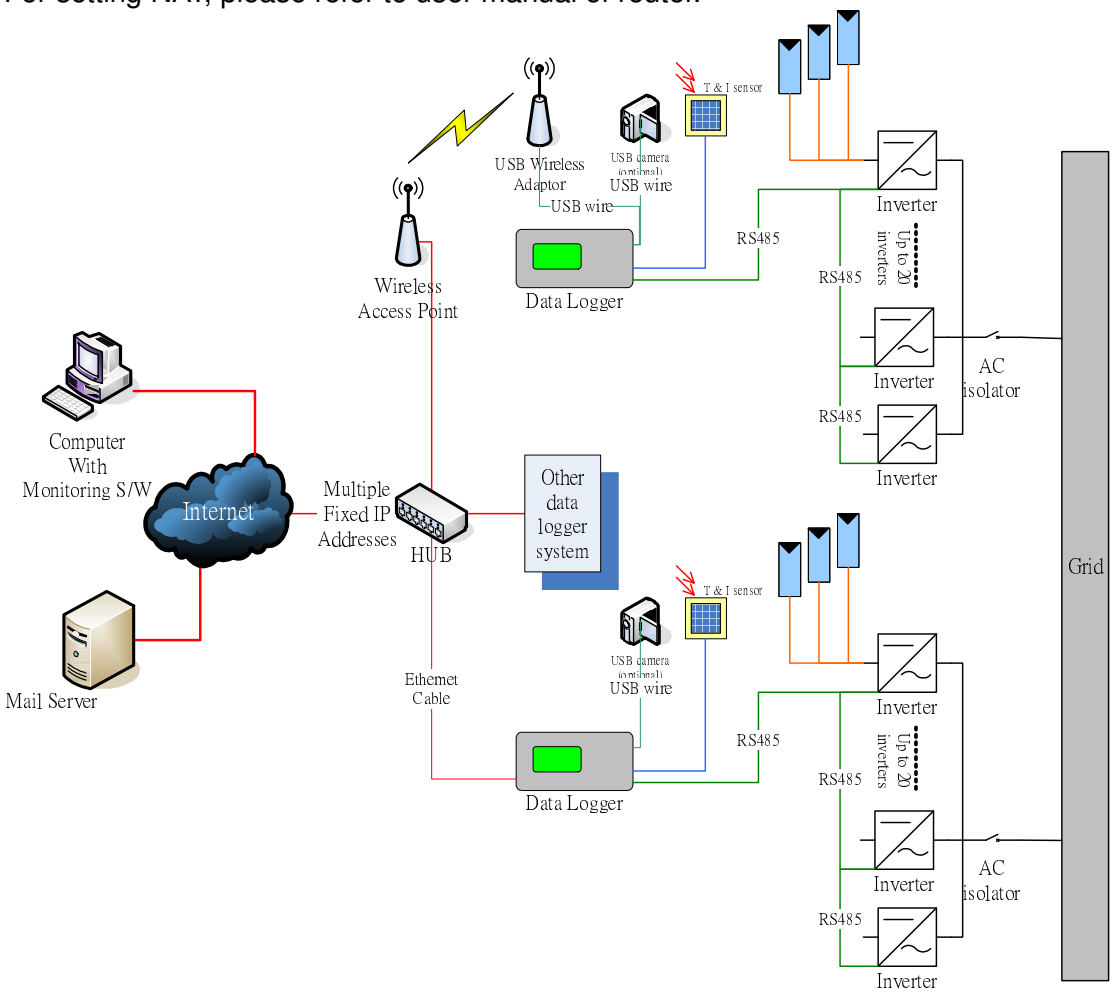


Fig.58 Internet connection

GPRS connection

EZ Logger Lite also supports GPRS Internet connection for rural area. The connection is shown below.

Please be aware that, due to bandwidth limitation, the data transfer rate (in the range of 15~50kbps) is much less than Ethernet cable, the response of the web could be very slow depends on real network conditions. We do not suggest to use GPRS network to transfer big data such as images.

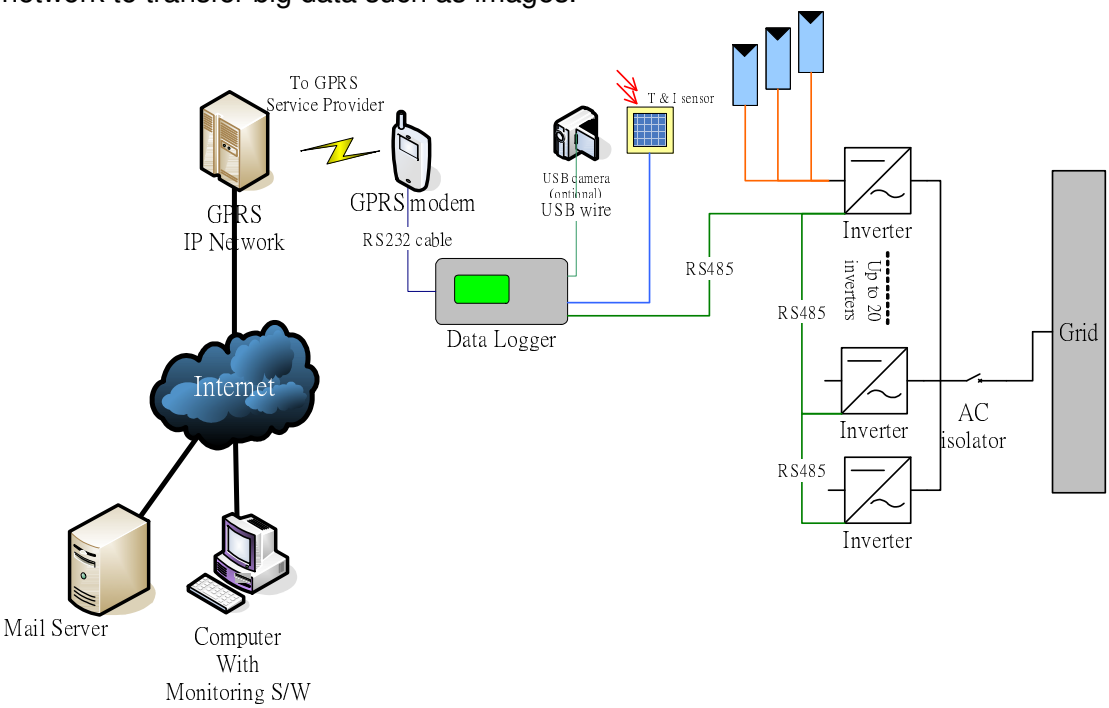


Fig.59 Internet connection by GPRS

Internet Connection with multiple floating IP

To access the data logger via Internet by floating IP, it is more complex than static IP. Because in a floating IP environment, the IP address might change frequently. In this case, you need to setup DDNS of data logger as stated in section 3.2.3 . The DDNS server is tracking your IP address all the time. To access the data logger, you just have to key in the name given by your DDNS service provider.

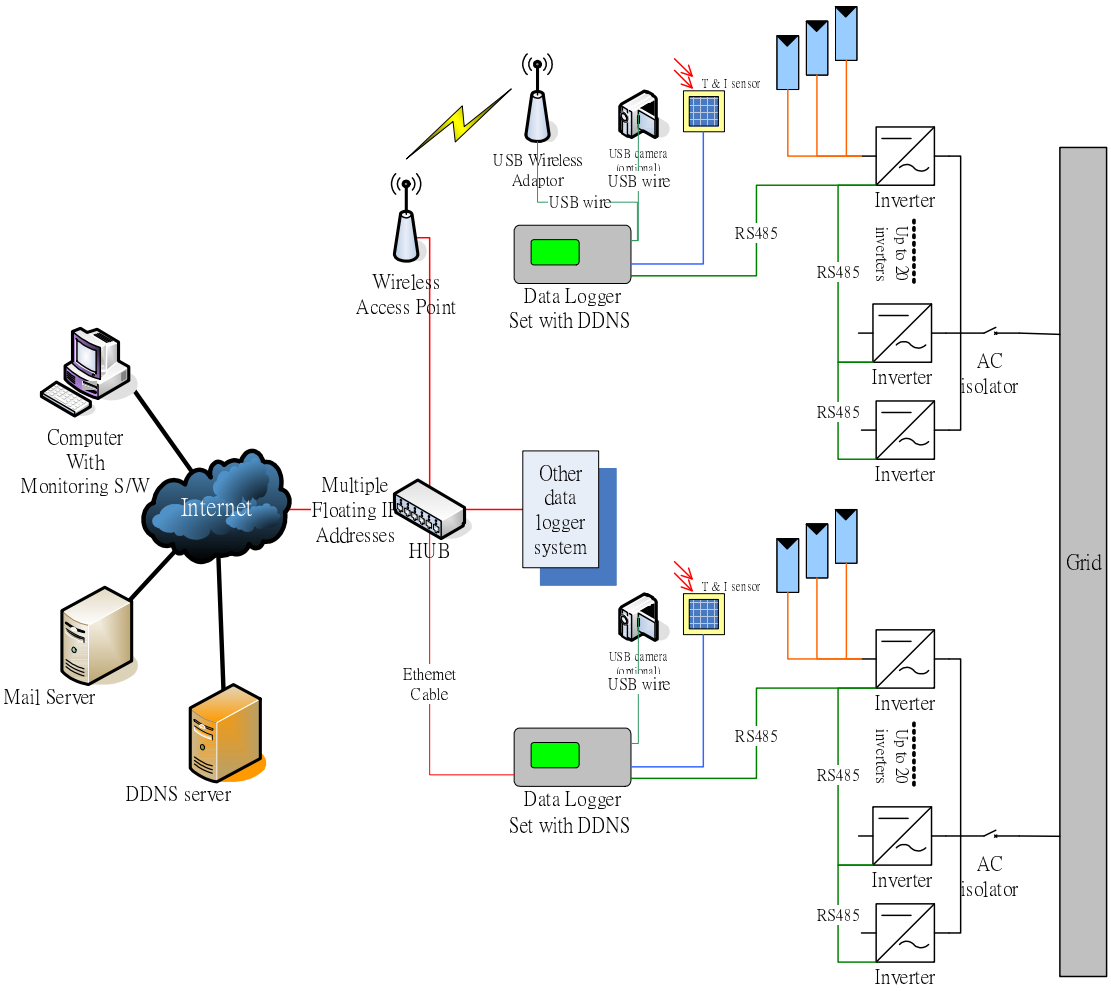


Fig.60 Internet connection by GPRS

Appendix F: Proxy Server Setting

*A **Proxy server** is a* server (a computer system or an application program), which services the requests of its clients by forwarding requests to other servers. *Use the proxy server can speed up the performance of Internet Explorer. However, using the server could also introduce the problem that user is not able to connect Data Logger properly. To solve this, please follow the steps below*

Open the Internet Options windows for IE as shown below.

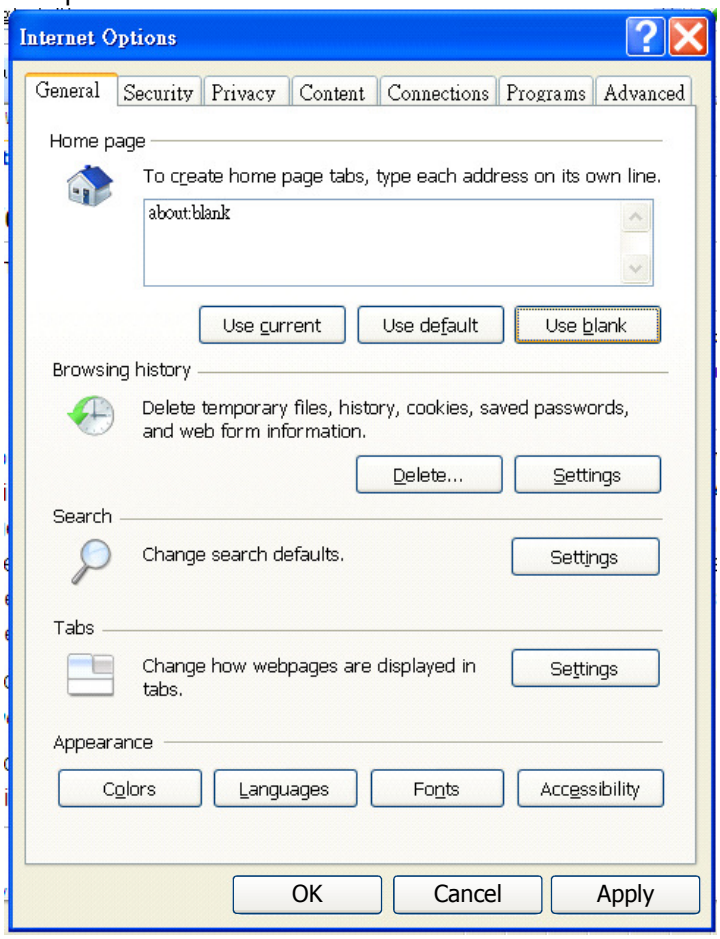


Fig.61 Option window of IE

1. On the top of menu
   (1) Click **Connections** to go to next window
   (2) Click **LAN Settings** to Local Area Network (LAN) Settings window
   (3) Click **Advanced** to Proxy Settings window
2. Key in the Logger's IP address in the block
3. Press **OK** for confirmation
4. Try to connect the logger again

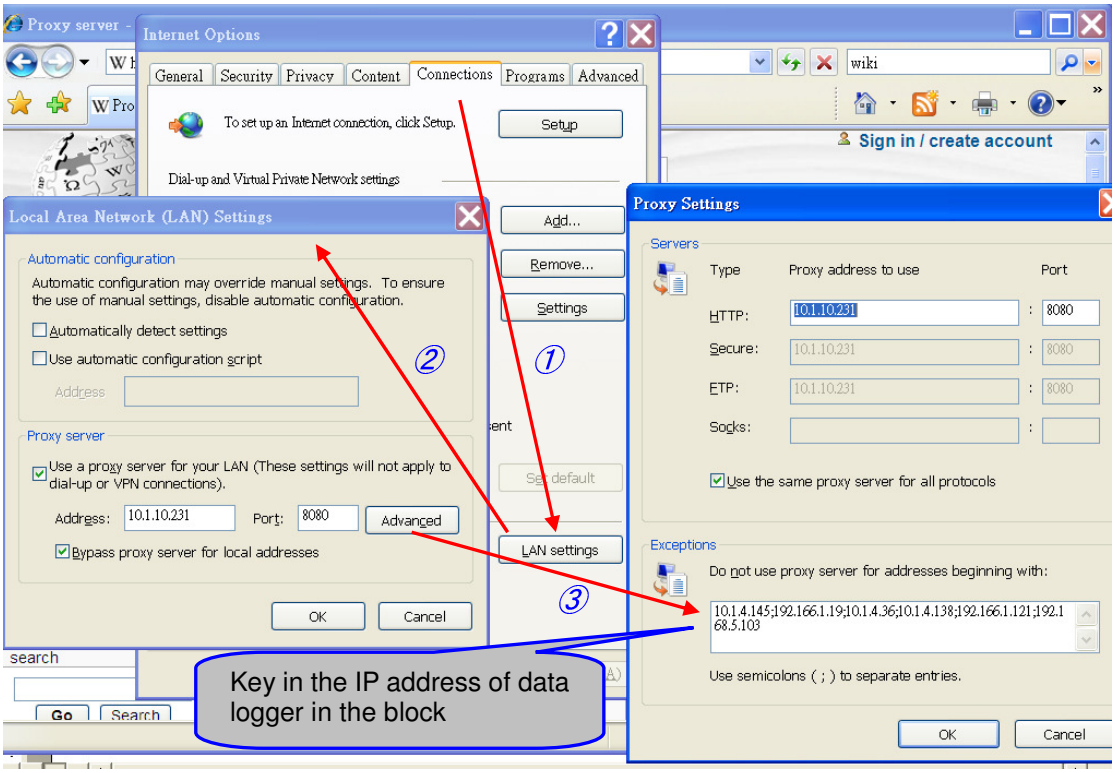


Fig. 62 Procedure of Proxy Settings

Appendix G: Glossary

The Glossary section defines the terms used in this User Manual

Term	Definition
Ethernet	Local Area Network technology, originally developed by Xerox Corporation, can link up to 1,024 nodes in a bus network. Ethernet provides raw data transfer in a rate of 10 megabits/sec. with actual throughputs in 2 to 3 megabits/sec. using a baseband (single-channel) communication technique. Ethernet uses carrier sense multiple access collision detection (CSMA/CD) that prevents network failures when two devices attempt to access the network at the same time. LAN hardware manufacturers use Ethernet protocol; their products may not be compatible.
Gateway	A computer that attaches to a number of networks and routes packets between them. The packets can be different protocols at the higher levels.
IP	Internet Protocol – The TCP/IP standard protocol defines the IP datagram as the unit of information passed across a network.
IP Address	Internet Protocol Address – A 32-bit address assigned to hosts participating in a TCP/IP network. The IP address consists of network and host portions. It is assigned to an interconnection of a host to a physical network.
MAC	Medium Access Control - The network layer between the physical and the data link layers. Specifically, the physical (hardware) address exists in this layer.
MIB	Management Information Base – The database, i.e. set of variables maintained by a gateway running SNMP
NMS	Network Management Station
OID	Object Identifier – The variables defined in a MIB
Router	A computer that manages traffic between different network segments or different network topologies. It directs the destination IP address. The network media can be different, but the higher-level protocols must be the same.
SNMP	Simple Network Management Protocol – A standard protocol used to monitor IP hosts, networks, and gateways. SNMP defines a set of simple operations that can be performed on the OIDs of the MIBs managed by the monitored Agents. It employs the UDP/IP transport layer to move its object between the Agents and the NMS
TCP/IP	Transmission Control Protocol/ Internet Protocol – A protocol suite used by more than 15 million users with a UNIX association and widely used to link computers of different kinds.